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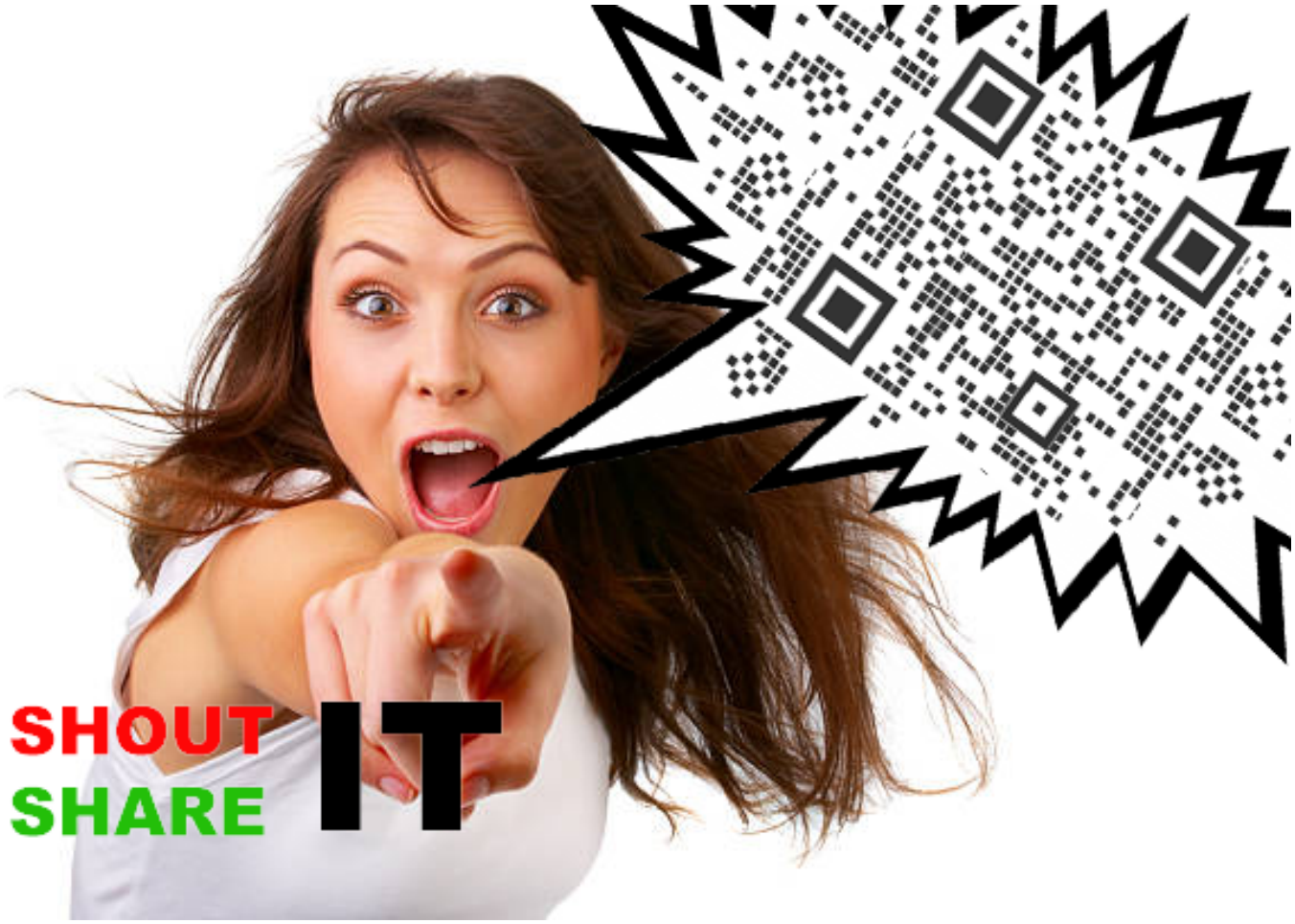
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U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF ENTOMOLOGY—BULLETIN No. 47.
(Revised Edition.)
L. O. HOWARD, Entomologist.

CATALOGUE

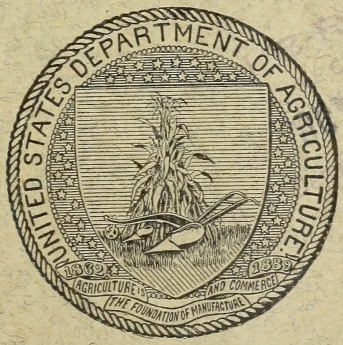
OF THE

EXHIBIT OF ECONOMIC ENTOMOLOGY

AT THE

LOUISIANA PURCHASE EXPOSITION, ST. LOUIS, MO., 1904.

COMPILED UNDER THE DIRECTION OF THE ENTOMOLOGIST
BY
E. S. G. TITUS AND F. C. PRATT.



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1904.

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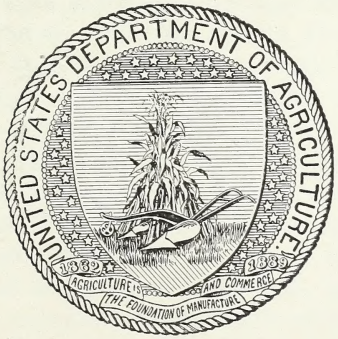

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1904.

LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Bureau of Entomology,
Washington, D. C., September 1, 1904.

Sir: I have the honor to transmit herewith for publication the accompanying revised copy of Bulletin No. 47, of this Bureau, a catalogue of the exhibit made by the Bureau of Entomology at the Louisiana Purchase Exposition.

Respectfully,

L. O. Howard,
Entomologist.

Hon. James Wilson,
Secretary of Agriculture.

INTRODUCTION.

The following catalogue of the exhibit of economic entomology made by the Bureau of Entomology, U. S. Department of Agriculture, at the Louisiana Purchase Exposition, has been prepared with a view of increasing the usefulness of the exhibit from an economic and educational standpoint, and it is intended to supplement the exhibit by giving bibliographical references which will enable persons interested readily to gain information additional to that conveyed by the label. The general supervision of the preparation of the exhibit itself was placed by the writer in the hands of Mr. August Busck, assistant in the Bureau of Entomology, and in this laborious task he has had the valuable expert assistance of Mr. F. C. Pratt and Mr. E. S. G. Titus, also assistants in the Bureau. The catalogue itself has been compiled by Messrs. Titus and Pratt. The present catalogue does not include a consideration of the exhibit of insects injurious to forest trees, which will be published as a separate pamphlet (Bulletin 48) on account of the desirability of independent distribution of this portion of the catalogue to persons interested in forestry matters.

The Division of Entomology has been represented at many international expositions, its first serious attempt to represent its work in this way having been made at the New Orleans Cotton Exposition of 1884. It was represented by large collections at the subsequent World's Fair at Chicago, at the International Exposition at Paris, at the expositions at Atlanta, Nashville, Omaha, Buffalo, and Charleston. The present exhibit, however, is, in many respects, a more interesting one than any of its predecessors. An effort has been made to illustrate in all of their stages the principal insects injurious to North American crops. Further attempts have been made to show the economic relations of insects in other respects and, on account of the great current interest in the subject of the spread of disease by insects, more attention has been paid to this subject than ever before. Special cases illustrating insects of the greatest immediate popular interest have been prepared, and a series of models of the most prominent economic insects of the day is shown. An effort has been made to introduce a novel feature in this exhibit, namely, living insects feeding under as natural conditions as possible, which will probably prove of quite as great interest to visitors as the illustrative cases of dried specimens.

In the bibliographical references under the titles of the individual exhibits in this catalogue the most comprehensive general articles have been indicated, and especial care has been taken to quote such publications as are most accessible. Reference to many of the earlier articles may be found in Bul. 31, Div. Ent., U. S. Dept. Agric., 1893, this being an index to the exhibit at the World's Columbian Exposition. In the systematic index the more important recent changes in entomological nomenclature have been cared for by cross references from old names to new names for both genera and species.

Persons desiring further information than can be gained from this catalogue or from conversation with the attendant in charge of exhibit are requested to address the writer at the U. S. Department of Agriculture, Washington, D. C.

L. O. Howard,
Entomologist.

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CATALOGUE OF THE EXHIBIT OF ECONOMIC ENTOMOLOGY AT THE LOUISIANA PURCHASE EXPOSITION.

INSECTS INJURIOUS TO ORANGE AND LEMON.

For general articles relating to insects affecting these fruits see Hubbard, 1885, and Insects Affecting the Orange, U. S. Dept. Agric., Marlatt, Scale Insects and Mites of Citrus Fruits, Farmers' Bul. 172, 1903.

THE APPLE TWIG-BEETLE.

Stephanoderes hispidulus Lec.

(Formerly *Hypothenemus eruditus* auct.)

EXHIBIT: Adult and work.

THE OAK AMBROSIA BEETLE.

Xyleborus affinis Eichh.

For general account see Hubbard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 19–20, 1897, under *X. pubescens* Zimm.

EXHIBIT: Adult, work, and figure.

THE PAN-AMERICAN PLATYPUS.

Platypus compositus Say.

For general article see Hubbard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 14–16, 1897.

EXHIBIT: Adult, work, and figure.

FULLER'S ROSE BEETLE.

Aramigus fulleri Horn.

For general account of life history see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 88–96, 1901.

EXHIBIT: Adult.

THE COFFEE-BEAN WEEVIL.

Araecerus fasciculatus De G.

For partial life history and general account see Chittenden, Bul. 8, n. s., Div. Ent., U. S. Dept. Agric., pp. 36–38, 1897.

EXHIBIT: Adult and work.

THE ORANGE CHRYSOBOTHRIS.

Chrysobothris chrysœla Ill.

EXHIBIT: Adult.

EPITRAGUS TOMENTOSUS Lec.

EXHIBIT: Adult.

PACHNÆUS DISTANS Horn.

EXHIBIT: Adult.

ORANGE LEAF-NOTCHER.

Artipus floridanus Horn.

EXHIBIT: Adult and work.

THE ORANGE SAWYER.

Elaphidion inerme Newm.

For general account see Chittenden, Bul. 18, n. s., Div. Ent., U. S. Dept. Agric., p. 41, 1898.

EXHIBIT: Adult and work.

LEPTOSTYLUS BIUSTUS Lec.

EXHIBIT: Adult and work.

THE ORANGE DOG; HOG CATERPILLAR.

Papilio thoas Linn.

(Formerly *P. cresphontes.*)

For brief account of larva see Lintner, 9th Rpt. State Ent. N. Y., pp. 336–337, 1893.

EXHIBIT: Eggs, larva, chrysalis, adult, and figure.

ORANGE LEAF-ROLLER.

Platynota rostrana Walk.

EXHIBIT: Eggs, pupa, and adult.

THE SADDLE-BACK CATERPILLAR.

Sibine stimulea Clem.

(Formerly *Empretia.*)

For general account see Lugger, 4th Rpt. State Ent. Minn., pp. 98–99, 1899.

EXHIBIT: Pupa, adult, and figure.

THE COMMON BAGWORM.

Thyridopteryx ephemeræformis Steph.

For general account see Packard, 5th Rpt. U. S. Ent. Com., pp. 258–262, 1890.

EXHIBIT: Larva, cocoon, adult, and figure.

THE STINGING CATERPILLAR.

Megalopyge opercularis S. and A.

For short account see Lugger, 4th Rpt. State Ent. Minn., pp. 95–96, 1899.

EXHIBIT: Cocoon and adult.

THE SKIFF CATERPILLAR.

Prolimacodes scapha Harr.

(Larva feeds on leaves.)

EXHIBIT: Adult.

THE ORANGE CASE-BEARER.

Eurycyttarus confederata Grt.

(Larvæ feed upon lichens on tree trunk, occasionally gnawing fruit; formerly *Psyche*.)

EXHIBIT: Cases on twig.

THE TWO-SPOTTED RED SPIDER.

Tetranychus mytilaspidis Riley.

For description and distribution see Banks, Tech. series 8, Div. Ent., U. S. Dept. Agric., pp 71–72, 1900.

For general account of *T. bimaculatus* see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 35–42, 1901.

EXHIBIT: Figure.

THE ORANGE WHITE SPOT.

Tetranychoides californica Bks.

For description see Banks, Journ. N. Y. Ent. Soc., v. XII, p. 54, pl. II, fig. 1, 1904.

EXHIBIT: Work and figure.

THE ORANGE FRUIT MITE.

Tenuipalpus californicus Bks.

For description see Banks, Journ. N. Y. Ent. Soc., v. XII, p. 55, pl. II, fig. 2, 1904.

EXHIBIT: Work and figure.

RUST MITE OF THE ORANGE; THE SILVER MITE OF THE LEMON.

Eriophyes oleivorus Ashm.

(Formerly *Phytoptus*.)

EXHIBIT: Figure.

THE TWO-STRIPED WALKING-STICK.

Anisomorpha buprestoides Stäl.

EXHIBIT: Nymph and adult.

THE ANGULAR-WINGED KATYDID.

Microcentrum retinerve Burm.

EXHIBIT: Eggs, adult, and parasitized eggs.

NORTHERN MOLE CRICKET.

Gryllotalpa borealis Burm.

EXHIBIT: Nymph and adult.

THE LUBBER GRASSHOPPER.

Dictyophorus reticulatus Thunb.

For brief account see Morgan, Bul. 30, n. s., Div. Ent., U. S. Dept. Agr., pp. 28–29, 1901.

EXHIBIT: Nymph and adult.

THE COTTON STAINER.

Dysdercus suturellus H-Schf.

For short accounts see Howard, Farmers' Bul. 47, U. S. Dept. Agric., pp. 30–31, 1897; Insect Book, p. 308, fig. 201 and pl. 31, fig. 15, 1901.

EXHIBIT: Nymph, adult, and figure.

EUTHOCTHA GALEATOR Fab.

EXHIBIT: Adult.

THE SOUTHERN LEAF-FOOTED PLANT-BUG.

Leptoglossus phyllopus Linn.

For general account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 46–48, 1899.

EXHIBIT: Adult.

EUSCHISTUS SERVUS Say.

EXHIBIT: Adult.

NEZARA HILARIS Say.

EXHIBIT: Adult.

WHITE FLY; MEALY WING.

Aleyrodes citri R. & H.

For general account see Marlatt, Farmers' Bul. U. S. Dept. Agric., 172, pp. 36–38, 1903.

EXHIBIT: Adult, work and figure.

ORANGE APHIS; COTTON APHIS.

Aphis gossypii Glover.

(Curls leaves and stops young growth; usually well controlled by parasites and other enemies.)

For short account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 58–61, 1903.

EXHIBIT: Eggs, adult, work, figure, and the enemies: *Baccha clavata*, *Hemerobius* sp., *Chrysopa plorabunda*, and a hymenopterous parasite.

COTTONY CUSHION SCALE; FLUTED SCALE.

Icerya purchasi Mask.

(Food plants: Acacia, cypress, grasses, lemon, orange, pine, rose; see under "The more important scale insects" for life history and enemies.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 25–27, 1903.

EXHIBIT: Infested twig.

THE DESTRUCTIVE MEALY-BUG.

Pseudococcus citri Risso.

(Formerly *Dactylopius destructor*.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 99–100, 1903.

EXHIBIT: Infested leaves.

THE LONG-SPINED MEALY-BUG.

Pseudococcus longispinus Targ.

(Formerly *Dactylopius* spp. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 104–105, 1903.

EXHIBIT: Infested leaves.

THE FLORIDA WAX-SCALE.

Ceroplastes floridensis Comst.

(Food plants: Citrus, fig, myrtle, oleander.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 157, 1903.

EXHIBIT: Infested leaves.

THE BARNACLE SCALE.

Ceroplastes cirripediformis Comst.

(Food plants: Myrtle, orange, persimmon, quince.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 150, 1903.

EXHIBIT: Infested leaves.

THE SOFT SCALE.

(Food plants: Laurel, lemon, myrtle, oleander, orange, etc.; formerly *Lecanium;* see under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 168–170, 1903.

EXHIBIT: Infested twig.

THE HEMISPHERICAL SCALE.

Saissetia hemisphærica Torg.

(Food plants: Oleander, orange, peach, etc.; formerly *Lecanium;* see under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 202–203, 1903.

EXHIBIT: Infested twig.

THE BLACK SCALE.

Saissetia oleæ Bern.

(Food plants: Apple, apricot, olive, orange, pear, plum, rose; formerly *Lecanium;* see under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 205–206, 1903.

EXHIBIT: Infested twig.

THE OLEANDER SCALE.

Aspidiotus hederæ Vall.

(Food plants: Currant, box, cherry, olive, oleander, orange, etc.; formerly *A. nerii* Bouché; see under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 260–264, 1903.

EXHIBIT: Infested twig.

THE ORANGE CHIONASPIS.

Chionaspis citri Comst.

(Food plants: Euonymus, orange, palms; see under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bull. 88, Mass. Agr. Coll., pp. 214–215, 1903; Marlatt, Yearbook, U. S. Dept. Agric., 1900, p. 270, 1901.

EXHIBIT: Infested twig.

THE RED SCALE OF CALIFORNIA.

Chrysomphalus aurantii Mask.

(Food plants: Agave, apple, fig, grape, lemon, orange, pear, plum, quince, willow, etc., formerly *Aspidiotus*; see under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 287–288, 1903; Marlatt, Yearbook, U. S. Dept. Agric., 1900, p. 268, 1901.

EXHIBIT: Infested twig.

THE CIRCULAR SCALE.

Chrysomphalus ficus Ashm.

(Food plants: Lemon, oleander, orange, palm, rose, etc.; see under "More important scale insects.")

For bibliography and food plants see *Chrysomphalus aonidum*, Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 286–287, 1903; Marlatt, Yearbook, U. S. Dept. Agric., 1900, p. 269, 1901.

EXHIBIT: Infested twig.

THE PURPLE SCALE.

Lepidosaphes beckii Newm.

(Food plants; Citron, fig, lemon, oak, orange. Formerly known as *Mytilaspis citricola* Glov.; see under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 305–306, 1903; Marlatt, Yearbook, U. S. Dept. Agric., 1900, p. 261, 1901.

EXHIBIT: Infested twig.

GLOVER'S SCALE; LONG SCALE.

Lepidosaphes gloveri Pack.

(Food plants: Lime, magnolia, orange, palms; formerly *Mytilaspis;* see under "More important scale insects," for figures and enemies.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 309, 1903; Marlatt, Yearbook, U. S. Dept. Agric., 1900, p. 265, 1901.

EXHIBIT: Infested twig.

THE CHAFF SCALE.

Parlatoria pergandei Comst.

(Food plants: Japonica, lemon, orange; see under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 319–320, 1903; Marlatt, Yearbook U. S. Dept. Agric., 1900, p. 270, 1901.

EXHIBIT: Infested twigs.

THE MORE IMPORTANT SCALE INSECTS.

COTTONY CUSHION SCALE; FLUTED SCALE.

Icerya purchasi Mask.

(Food plants: Acacia, cypress, grasses, lemon, orange, pine, rose; etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 25–27, 1903.

EXHIBIT: Infested twigs, illustrations and enemies: *Chilocorus cacti*, *Corizus hyalinus*, *Novius cardinalis*, and *Piesma cinerea.*

THE LONG-SPINED MEALY-BUG.

Pseudococcus longispinus Targ.

(Formerly *Dactylopius* spp.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 104–105, 1903.

EXHIBIT: Infested leaves and figures.

THE DESTRUCTIVE MEALY-BUG.

Pseudococcus citri Risso.

(Formerly *Dactylopius destructor.*)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 99–100, 1903.

EXHIBIT: Infested leaves.

COTTONY MAPLE SCALE.

Pulvinaria innumerabilis Rathv.

(Food plants: Alder, apple, box-elder, elm, grape, linden, maples, oak, willow, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 134–135, 1903; Howard, Bul. 22, n. s. Div. Ent. U. S. Dept. Agric., pp. 8–16, 1900, figs.

EXHIBIT: Infested twigs and figures.

THE BARNACLE SCALE.

Ceroplastes cirripediformis Comst.

(Food plants: Myrtle, orange, persimmon, quince.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 150, 1903.

EXHIBIT: Infested twig.

THE FLORIDA WAX-SCALE.

Ceroplastes floridensis Comst.

(Food plants: Citrus, fig, myrtle, oleander.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 157, 1903.

EXHIBIT: Infested twigs.

THE SOFT SCALE.

Coccus hesperidum Linn.

(Food plants: Laurel, lemon, myrtle, oleander, orange, etc.; formerly *Lecanium*.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 168–170, 1903.

EXHIBIT: Infested twigs and figures.

THE TERRAPIN SCALE.

Eulecanium nigrofasciatum Perg.

(Food plants: Apple, birch, linden, maple, peach, plum, sycamore; formerly *Lecanium*.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 191, 1903; Pergande, Bul. 18, n. s. Div. Ent., U. S. Dept. Agric., pp. 26–29, 1898, figs.

EXHIBIT: Infested twig and figures.

THE HEMISPHAERICAL SCALE.

Saissetia hemisphærica Targ.

(Food plants: Oleander, orange, peach, etc.; formerly *Lecanium*.)

For bibliograpy and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 202–203, 1903.

EXHIBIT: Infested twig.

THE BLACK SCALE.

Saissetia oleæ Bern.

(Food plants: Apple, apricot, olive, orange, pear, plum, rose; formerly *Lecanium*.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 205–206, 1903.

EXHIBIT: Infested twig, and parasite *Coccophagus cognatus* How.

THE ORANGE CHIONASPIS.

Chionaspis citri Comst.

(Food plants: Enonymus, orange, palms, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 214–215, 1903; Marlatt, Yearbook, U. S. Dept. Agric., f. 1900, p. 270, 1901.

EXHIBIT: Infested twig.

THE SCURFY BARK-LOUSE.

Chionaspis furfura Fitch.

(Food plants: Apple, cherry, currant, elm, pear, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 217–219, 1903; Howard, Yearbook, U. S. Dept. Agric., f. 1894, pp. 259–261, 1895, figs.; Banks, Bul. 34, Div. Ent., U. S. Dept. Agric., p. 14, 1902.

EXHIBIT: Infested twig and figures.

THE WEST INDIAN PEACH SCALE.

Diaspis pentagona Targ.

For bibliography and partial list of food plants under *Aulacaspis* see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 234–235, 1903; Riley and Howard, Ins. Life, Vol. VI, pp. 287–295, 1894, figs.; Banks, Bul. 34, Div. Ent., U. S. Dept. Agric., p. 21, 1902.

EXHIBIT: Infested twigs and figures.

THE ROSE SCALE.

Aulacaspis rosæ Bouche.

(Food plants: Blackberry, mango, myrtle, pear, raspberry, rose, Cycas, Ailanthus, etc.)

For bibliography see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 236, 1903; Banks, Bul. 34, Div. Ent., U. S. Dept. Agric., p. 23, 1902.

EXHIBIT: Infested twig and figure.

THE HORSE-CHESTNUT SCALE.

Aspidiotus æsculi Johns.

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 251–252, 1903.

EXHIBIT: Infested twigs.

PUTNAM SCALE; CRANBERRY SCALE.

Aspidiotus ancylus Putn.

(Food plants: Apple, apricot, box-elder, cottonwood, cranberry, elm, hemlock, maple, oak, peach, pear, plum, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 252–253, 1903.

Exhibit: Infested twig.

THE LINDEN SCALE.

Aspidiotus diffinis Newst.

(Food plants: Basswood, lilac.)

For bibliography see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 257, 1903.

Exhibit: Infested twigs.

THE EUROPEAN FRUIT SCALE.

Aspidiotus ostreæformis Curt.

(Food plants: Apple, cherry, maple, oak, peach, pear, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 268–270, 1903.

Exhibit: Infested twig and figures.

THE CHERRY; FORBES' SCALE.

Aspidiotus forbesi Johns.

(Food plants: Apple, cherry, currant, honey locust, peach, pear, plum, walnut, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 259–260, 1903.

Exhibit: Infested twig and figure.

THE GRAPE SCALE.

Aspidiotus uvæ Comst.

(Food plants: Grape, hickory.)

For bibliography see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 280, 1903.

Exhibit: Infested twig and figure.

THE WALNUT SCALE.

Aspidiotus juglans-regiæ Comst.

(Food plants: Ash, cherry, crab apple, currant, English walnut, locust, peach, pear, prune, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 265, 1903.

Exhibit: Infested twig and figure.

PALM SCALE.

Aspidiotus lataniæ Sign.

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 266–267, 1903.

EXHIBIT: Infested twig and leaves.

THE SAN JOSE SCALE.

Aspidiotus perniciosus Comst.

(Food plants: Almond, apple, apricot, birch, black walnut, black currant, catalpa, chestnut, crab apple, crab grass, cherry, grape, hickory, oak, peach, pear, persimmon, plum, poplar, prune, Rocky Mountain cherry, rose, silver maple, willow, and many other plants.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 271–275, 1903; Howard and Marlatt, Bul. 3, n. s. Div. Ent. U. S. Dept. Agric., 1896, 80 pp.

EXHIBIT: Infested twig, fruit, figures, and enemies: *Smilia misella* Lec., adult and figure; *Chilocorus similis* Rossi, larva, pupa, adult, and figure; parasite *Aphelinus diaspidis* How., adult and figure.

THE GREEDY SCALE.

Aspidiotus rapax Comst.

(Food plants: Cottonwood, maple, olive, pear, quince, apple, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 276–278, 1903.

EXHIBIT: Infested twig and figure.

THE OLEANDER SCALE.

Aspidiotus hederæ Vall.

(Food plants: Currant, box, cherry, olive, oleander, orange, etc.; formerly *A. nerii* Bouché.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 260–264, 1903.

EXHIBIT: Infested twig and figure.

THE CIRCULAR SCALE.

Chrysomphalus ficus Ashm.

(Food plants: Lemon, oleander, orange, palm, rose, etc.; formerly *Aspidiotus*.)

For bibliography and food plants see *Chrysomphalus aonidum*, Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 286–287, 1903; Marlatt, Yearbook U. S. Dept. Agric. f. 1900, p. 269, 1901.

EXHIBIT: Infested twig and figure.

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THE CALIFORNIA RED SCALE.

Chrysomphalus aurantii Mask.

(Food plants: Agave, apple, fig, grape, lemon, orange, pear, plum, quince, willow, etc.; formerly *Aspidiotus.*)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 287–288, 1903; Marlatt, Yearbook, U. S. Dept. Agric., 1900, p. 268, 1901.

EXHIBIT: Infested twig and figure.

GLOVER'S SCALE; LONG SCALE.

Lepidosaphes gloveri Pack.

(Food plants: Lime, magnolia, orange, palms; formerly *Mytilaspis.*)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 309, 1903; Marlatt, Yearbook, U. S. Dept. Agric, 1900, p. 265, 1901.

EXHIBIT: Infested twig, figures, and the following enemies: *Chilocorus bivulnerus* Muls., *C. cacti* Linn., *Coccinella abdominalis* Say, *C. californica* Mann., *C. sanguinea* Linn., *C. oculata* Fabr., *Dakruma coccidivora* Comst., *Exochomus contristatus* Muls., *Hippodamia ambigua* Lec., *H. convergens* Guen., *Hyperaspidius coccidivora* Ashm., *Scymnus bioculatus* Muls., *S. cervicalis* Muls.

OYSTER-SHELL BARK-LOUSE.

Lepidosaphes ulmi Linn.

(Attacks principally apple, currant, Cornus, cottonwood, lilac, pear, sassafras, etc.; formerly *Mytilaspis pomorum* Bouché.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 314–317, 1903.

EXHIBIT: Infested twig and figure.

THE PURPLE SCALE.

Lepidosaphes beckii Newm.

(Food plants: Citron, fig, lemon, oak, orange; formerly known as *Mytilaspis citricola* Glov.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 305–306, 1903; Marlatt, Yearbook, U. S. Dept. Agric., 1900, p. 261.

EXHIBIT: Infested twig and figure.

THE CHAFF SCALE.

Parlatoria pergandei Comst.

(Food plants: Japonica, lemon, orange.)

For bibliography and food-plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 319–320, 1903; Marlatt, Yearbook, U. S. Dept. Agric., 1900, p. 270.

EXHIBIT: Infested twigs and figure.

WHITE FLY; MEALY WING.

Aleyrodes citri R. & H.

For general articles see Marlatt, Farmers' Bul. 172, U. S. Dept. Agric., pp. 36–38, 1903; also Ins. Life, v. V, pp. 219–226, 1893.

EXHIBIT: Adult, work, and figure.

INSECTS INJURIOUS TO APPLE.

For special treatises on apple insects see Bruner, Trans. Nebr. St. Hort. Soc. f. 1894, pp. 155–223, 1895; Harvey and Munson, Bul. 56, Maine Agr. Expt. Sta., 1899; Saunders, Insects Injurious to Fruits, 2d ed., pp. 13–139, 1900.

INJURING THE ROOTS.

THE WOOLLY APPLE APHIS.

Schizoneura lanigera Hausm.

For general account see Marlatt, Cir. 20, Div. Ent., U. S. Dept. Agric., 1897.

EXHIBIT: Work, figure, parasite, *Aphelinus mali* Hal.; and enemy *Scymnus cervicalis* Muls.

INJURING THE TRUNK.

FLAT-HEADED APPLE-TREE BORER.

Chrysobothris femorata Fab.

For general account see Chittenden, Cir. 32, Div. Ent., U. S. Dept. Agric., pp. 9–12, 1898.

EXHIBIT: Adult, work, and figure.

ROUND-HEADED APPLE-TREE BORER.

Saperda candida Fab.

For general account see Chittenden, Cir. 32, Div. Ent., U. S. Dept. Agric., pp. 1–8, 1898.

EXHIBIT: Adult, work, and figure.

APPLE-WOOD STAINER; PIN-BORER.

Pterocyclon mali Fitch.

(Formerly *Monarthrum.*)

For general account of this and an allied species, *M. fasciatum*, see Hubbard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 26–28, 1897.

EXHIBIT: Adult and figure.

INJURING THE BRANCHES.

THE APPLE-TREE PRUNER.

Elaphidion villosum Fabr.

For full account and food plants see Chittenden, Bul. 18, n. s., Div. Ent., U. S. Dept. Agric., pp. 35–40, 1898.

EXHIBIT: Adult, work, and figure.

THE NEW YORK WEEVIL.

Ithycerus noveboracensis Först.

For general account see Lugger, 5th Rpt. St. Ent. Minn., pp. 187–189, 1899.

EXHIBIT: Adult and work.

THE APPLE TWIG-BORER.

Amphicerus bicaudatus Say.

For general account see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., pp. 11–13, fig., 1898.

EXHIBIT: Adult, work, and figure.

THE APPLE TWIG-BEETLE.

Stephanoderes hispidulus Lec.

(Formerly *Hypothenemus*.)

EXHIBIT: Adult and work.

PEAR-BLIGHT BEETLE; SHOT-BORER.

Xyleborus pyri Peck.

(Formerly *X. dispar*.)

For general account see Hubbard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 22–23, 1897.

EXHIBIT: Adult and work.

THE COSMOPOLITAN AMBROSIA BEETLE.

Xyleborus saxeseni Ratz.

(Formerly *X. xylographus*.)

For general account see Hubbard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 24–26, 1897.

EXHIBIT: Adult.

FRUIT-TREE BARK BEETLE; THE SHOT-HOLE BORER.

Scolytus rugulosus Ratz.

For general account see Chittenden, Cir. 29, Div. Ent., U. S. Dept. Agric., 1898.

EXHIBIT: Adult and figure.

THE BUFFALO TREE-HOPPER.

Ceresa bubalus Say.

For general account see Marlatt, Cir. 23, Div. Ent., U. S. Dept. Agric., 1897.

EXHIBIT: Adult, work, and figure.

THE PERIODICAL CICADA.

Tibicen septendecim Linn.

(See special case containing life history, with illustrations of this insect and its work.)

For life history and general article see Marlatt, Bul. 14, n. s., Div. Ent., U. S. Dept Agric., 1898.

EXHIBIT: Pupa, pupa skins, and adult.

THE SAN JOSE SCALE.

Aspidiotus perniciosus Comst.

(Food plants: Almond, apple, apricot, birch, black walnut, black currant, catalpa, chestnut, crab apple, crab grass, cherry, grape, hickory, oak, peach, pear, persimmon, plum, poplar, prune, Rocky Mountain cherry, rose, silver maple, willow, and many other plants. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 271–275, 1903; Howard and Marlatt, Bul. 3, n. s., Div. Ent., U. S. Dept. Agric., 1896. 80 pp.

EXHIBIT: Infested twig.

PUTNAM SCALE; CRANBERRY SCALE.

Aspidiotus ancylus Putn.

(Food plants: Apple, apricot, box elder, cottonwood, cranberry, elm, hemlock, maple, oak, peach, pear, plum, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 252–253, 1903.

EXHIBIT: Infested twig.

THE CHERRY SCALE; FORBES' SCALE.

Aspidiotus forbesi Johns.

(Food plants: Apple, cherry, currant, honey locust, peach, pear, plum, walnut, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 259–260, 1903.

EXHIBIT: Infested twig.

THE GREEDY SCALE.

Aspidiotus rapax Comst.

(Food plants: Cottonwood, maple, olive, pear, quince, apple, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 276–278, 1903.

EXHIBIT: Infested twig.

THE EUROPEAN FRUIT-SCALE.

Aspidiotus ostreæformis Curt.

(Food plants: Apple, cherry, maple, oak, peach, pear, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 268–270, 1903.

EXHIBIT: Infested twig.

THE SCURFY BARK LOUSE.

Chionaspis furfura Fitch.

(Food plants: Apple, cherry, currant, elm, pear, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 217–219, 1903; Howard, Yearbook, U. S. Dept. Agric., 1894, pp. 259–261, figs.; Banks, Bul. 34, Div. Ent., U. S. Dept. Agric., p. 14, 1902.

EXHIBIT: Infested twig.

OYSTER-SHELL BARK-LOUSE.

Lepidosaphes ulmi Linn.

(Attacks principally apple, currant, Cornus, cottonwood, lilac, pear, sassafras, etc. Formerly *Mytilaspis pomorum* Bouché. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 314–317, 1903.

EXHIBIT: Infested twig.

THE BLACK SCALE.

Saissetia oleæ Bern.

(Food plants: Apple, apricot, olive, orange, pear, plum, rose; formerly a Lecanium. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 205–206, 1903.

EXHIBIT: Infested twig.

INJURING THE LEAVES.

PISTOL CASE-BEARER.

Coleophora malivorella Riley.

(Feeds on leaves and buds.)

For general account see Slingerland, Bul. 124, Cornell Univ. Agr. Expt. Sta., 1897.

EXHIBIT: Cocoon, adult, work, and figure.

EYE-SPOTTED BUD-MOTH.

Tmetocera ocellana Schiff.

(Feeds on buds and young leaves.)

For general account see Slingerland, Bul. 50, Cornell Univ. Agr. Expt. Sta., 1893.

EXHIBIT: Pupa, adult, and work.

APPLE-TREE BUCCULATRIX.

Bucculatrix pomifoliella Clem.

For general account and partial bibliography see Slingerland and Fletcher, Bul. 214, Cornell Univ. Agr. Expt. Sta., pp. 69–78, figs., 1903.

EXHIBIT: Cocoon, adult, and figure.

THE RESPLENDENT SHIELD-BEARER.

Coptodisca splendoriferella Clem.

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 263–265, 1899.

EXHIBIT: Cocoon, adult, work, and figure.

CHAPIN'S APPLE-LEAF SEWER.

Ancylis nubeculana Clem.

For brief article see Lugger, 4th Rpt. St. Ent. Minn., pp. 239–240, 1899.

EXHIBIT: Pupa, adult, work, and figure.

THE OBLIQUE-BANDED LEAF-ROLLER.

Archips rosaceana Harr.

(Formerly *Cacœcia.*)

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 226–227, 1899.

EXHIBIT: Pupa, adult, and work.

THE LESSER APPLE LEAF-FOLDER.

Acleris minuta Rob.

(Formerly *Teras.*)

For general account see J. B. Smith, Farmers' Bul. 178, U. S. Dept. Agric., pp. 12–17, 1903.

EXHIBIT: Pupa and adult.

THE LEAF CRUMPLER.

Mineola indiginella Zell.

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 211–213, 1899.

EXHIBIT: Cocoon, pupa, adult, and figure.

THE APPLE-LEAF SKELETONIZER.

Canarsia hammondi Riley.

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 217–218, 1899.

EXHIBIT: Pupa, adult, and work.

APPLE-TREE TENT-CATERPILLAR.

Malacosoma americana Fab.

(Formerly *Clisiocampa.*)

For life history and bibliography see Felt, 14th Rpt. St. Ent. N. Y., pp. 177–190, 1898.

Exhibit: Eggs, larva, cocoon, pupa, adult and work, and the parasites; *Pimpla conquisitor* Say, and *Ichneumon lætus* Brullé.

THE LIME-TREE WINTER-MOTH.

Erannis tiliaria Harr.

(Formerly *Hibernia.*)

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 193–195, 1899.

Exhibit: Pupa, adult, and figure.

THE ELM SPAN-WORM.

Ennomos subsignarius Hbn.

For general account see Packard, 5th Rpt. U. S. Ent. Comm., pp. 232–233, 306–307, 1890.

Exhibit: Eggs, larva, pupa, and work.

THE APPLE LEAF-MINER.

Tischeria malifoliella Clem.

For life history and bibliography see Lintner, 11th Rpt. N. Y. St. Ent., pp. 160–162, 1896.

Exhibit: Adult and work.

THE SPRING CANKER-WORM.

Paleacrita vernata Peck.

For general account see Coquillett, Cir. 9, Div. Ent., U. S. Dept. Agric., pp. 1–3, 1895.

Exhibit: Larva, adult, and figure.

THE FALL CANKER-WORM.

Alsophila pometaria Harr.

(Formerly *Anisopteryx.*)

For general account see Coquillett, Cir. 9, Div. Ent., U. S. Dept. Agric., pp. 3–4, 1895.

Exhibit: Eggs, larva, cocoon, adult, and figure.

THE WHITE-MARKED TUSSOCK-CATERPILLAR.

Hemerocampa leucostigma S. & A.

(Larvæ feed extensively upon fruit and shade trees and often damage shrubs and vines; see special case containing life history and parasites.)

For general account of this insect and its parasites see Howard, Tech. Ser., 5, Div. Ent., U. S. Dept. Agric., 1897; for life history, etc., Howard, Farmers' Bul. 99, pp. 12–20, 1899.

Exhibit: Egg-masses, larva, and adult.

THE FALL WEB-WORM.

Hyphantria cunea Dru.

For general account see Howard, Farmers' Bul. 99, U. S. Dept. Agric., pp. 20–25, 1899.

EXHIBIT: Larva, pupa, adult, and work.

THE COMMON BAGWORM.

Thyridopteryx ephemeræformis Steph.

For general account see Packard, 5th Rpt. U. S. Ent. Comm., pp. 258–262, 1890.

EXHIBIT: Cocoons and figure.

IO MOTH.

Automeris io Fab.

For general account see Lugger, 4th Rpt. State Ent. Minn., pp. 126–129, fig. 130, and pl. 16, fig. 129, 1899.

EXHIBIT: Adult.

THE BROWN-TAIL MOTH.

Euproctis chrysorrhœa Linn.

For life history and general article see Fernald and Kirkland, Spec. Bul. Hatch. Expt. Sta., Mass., 15 pp., 1 fig., 3 pls., 1898.

EXHIBIT: Larva, adult and figure.

THE GYPSY MOTH.

Porthetria dispar Linn.

For life history, habits and general account see Forbush and Fernald, "The Gypsy Moth," 495 pp. + i–c, 1896; Howard, Bul. 11, n. s., Div. Ent., U. S. Dept. Agric., 1897. (Formerly *Ocneria.*)

EXHIBIT: Larva, adult, and figure.

THE CLIMBING CUTWORM.

Euxoa scandens Riley.

(Formerly *Carneades.*)

For general account see Slingerland, Bul. 104, Cornell Univ. Agr. Expt. Sta., pp. 567–569, Pl. I, 1895.

EXHIBIT: Adult.

APPLE-TREE APHIS.

Aphis mali Fitch.

For general account see Smith, Bul. 143, N. J. Agr., Expt. Sta., 1900.

For general article treating of several species occurring on apple see Pergande, Bul. 44 Div. Ent., U. S. Dept. Agric., pp. 5–23, 1904.

EXHIBIT: Work and figure and the following enemies: *Adalia bipunctata* L., *Anatis 15-punctata* Ol., *Coccinella novemnotata* Hbst., *C. sanguinea* L., *Harmonia picta* Rand., *Hippodamia convergens* Guen., and *H. 13-punctata* L.

THE CECROPIA SILK MOTH.

Samia cecropia Linn.

For general account see Riley, 4th Rpt. Ins. Mo., pp. 103-111, 1872.

Exhibit: Larva, cocoon, and adult.

THE IMBRICATED SNOUT-BEETLE.

Epicærus imbricatus Say.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 28–29, 1903, and Bul. 19, n. s., pp. 62–67, 1899.

Exhibit: Adult.

SYNETA ALBIDA Lec.

For brief notice see Riley and Howard, Insect Life, v. IV, p. 396, 1892.

Exhibit: Adult and work.

RED-LEGGED FLEA-BEETLE.

Crepidodera rufipes Linn.

For general article see Insect Life, v. V, pp. 334–342, 1893.

Exhibit: Adult.

THE APPLE-LEAF FLEA-WEEVIL.

Orchestes pallicornis Say.

For short account of life history see Forbes, Trans. Ill. St. Hort. Soc., f. 1901, p. 147, 1902.

Exhibit: Adult.

INJURING THE FRUIT.

TEN-SPOTTED XANTHONIA.

Xanthonia decemnotata Say.

Exhibit: Adult and work.

THE INDIAN EUPHORIA.

Euphoria inda Linn.

For life history and general account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 67–74, 1899.

Exhibit: Adult and work.

JUNE BEETLE; FIG EATER.

Allorhina nitida Linn.

For general account see Howard, Bul. 10, n. s., Div. Ent., U. S. Dept. Agric., pp. 20-26, 1898.

Exhibit: Adult.

CODLING MOTH; APPLE WORM.

Carpocapsa pomonella Linn.

For full bibliography, life history, and illustrations see Simpson, Bul. 41, Div. Ent., U. S. Dept. Agric., 105 pp., 1903, figs.

Exhibit: Full life history (larva, pupa, cocoons, and adult) and parasites: *Pimpla annulipes* and *P. conquisitor.* Enemies: *Chauliognathus pennsylvanicus* and *Telephorus bilineatus.*

THE GREEN FRUIT-WORMS.

The three following species of *Xylina* are commonly known as green fruit-worms.

For general account see Slingerland, Bul. 123, Cornell Univ. Agr. Expt. Sta., 1896.

Xylina antennata Walk.

EXHIBIT: Adult and figure.

Xylina grotei Riley.

EXHIBIT: Adult and figure.

Xylina laticinerea Grote.

EXHIBIT: Adult and figure.

ILLUSTRATION SHOWING WORK OF A TORTRICID ON APPLE.

(The larva mines in and feeds beneath the skin of the fruit.)

THE PLUM CURCULIO.

Conotrachelus nenuphar Hbst.

For general account and bibliography see Lintner, 7th Rpt. N. Y. St. Ent., pp. 288–296, 1891.

EXHIBIT: Adult and figure.

THE APPLE CURCULIO.

Anthonomus quadrigibbus Say.

For general account see Gillette, Bul. 11, Iowa Agric. Expt. Sta., pp. 492–494, 1890.

EXHIBIT: Adult and figure.

THE APPLE-FRUIT MAGGOT.

Rhagoletis pomonella Walsh.

(Formerly *Trypeta*.)

For life history see Harvey, Rpt. Maine Agr. Expt. Sta., p. 190, 1889; Banks, Bul. 34, Div. Ent., U. S. Dept. Agric., p. 45, 1902.

Exhibit: Puparium, adult, and figure.

THE PERIODICAL CICADA.

THE PERIODICAL CICADA.

Tibicen septendecim Linn.

(Injures by deposition of eggs in the twigs almost all fruit, shade, and forest trees. Formerly *Cicada*.)

For life history and general article see Marlatt, Bul. 14, n. s., Div. Ent., U. S. Dept. Agric. 1898.

EXHIBIT: Full life history with figures. Enemies: *Megastizus speciosus* Dru. (adult and figure), *Oripoda elongata* (figure), *Pediculoides ventricosus* (figure).

WHITE-MARKED TUSSOCK CATERPILLAR AND PARASITES.

For general account of this insect and the parasites affecting it see Howard, Tech. series, 5, Div. Ent., U. S. Dept. Agric., 1897. For life history, etc., see Howard, Farmers' Bul. 99, U. S. Dept. Agric., pp. 12–20, 1899.

THE WHITE-MARKED TUSSOCK-CATERPILLAR.

Hemerocampa leucostigma S. & A.

(Larvæ feed extensively upon fruit and shade trees and often damage shrubs and vines.)

EXHIBIT: Egg masses, larva, pupa, cocoon, adult, figure, and the following parasites:

Primary Hymenopterous Parasites.

Pimpla conquisitor Say.

EXHIBIT: Adult, cocoon, and figure.

Pimpla annulipes Say.

EXHIBIT: Adult.

Pimpla inquisitor Say.

EXHIBIT: Adult, cocoon, and figure.

Apanteles hyphantriæ Riley.

EXHIBIT: Adult and cocoon.

Meteorus communis Cress.

EXHIBIT: Adult and cocoon.

Limneria valida Cress.

EXHIBIT: Adult and cocoon.

Chalcis ovata Say.

EXHIBIT: Adult.

Secondary Hymenopterous Parasites.

Dibrachys boucheanus Ratz.

(Parasitic on *Pimpla*, *Meteorus*, etc.)
EXHIBIT: Adult and figure.

Chalcis debilis Say.

(Parasite on *Pimpla*, *Meteorus*, etc.)
EXHIBIT: Adult and cocoon.

Tertiary Hymenopterous Parasites.

Asecodes albitarsis Ashm.

(Parasite on *Dibrachys*.)
EXHIBIT: Adult and figure.

Primary Dipterous Parasites.

Tachina mella Walk.

EXHIBIT: Adult.

Frontina aletiæ Riley.

EXHIBIT: Adult.

INSECTS INJURIOUS TO PEACH.

Saunders, Insects Injurious to Fruit, 2d edit., pp. 191–200, 1900.

THE NATIVE PEACH BARK-BEETLE.

Phlœophthorus liminaris Harr.

(Formerly *Phlæotribus.*)

For general account see Lintner, 9th Rpt. N. Y. St. Ent., pp. 365–368, 1893.

Exhibit: Adult and work.

THE FRUIT-TREE BARK-BEETLE.

Scolytus rugulosus Ratz.

For general account see Chittenden, Cir. 29, Div. Ent., U. S. Dept Agric., 1898.

Exhibit: Adult, work, figure, and the parasite *Chiropachys colon.*

THE PEACH-TREE BORER.

Sanninoidea exitiosa Say.

(Formerly *Sannina.*)

For general account see Marlatt, Cir. 17, Div. Ent., U. S. Dept. Agric., 1896.

Exhibit: Pupa, cocoon, adult, and figure.

THE PERIODICAL CICADA.

Tibicen septendecim Linn.

(Injures by deposition of eggs in the twigs almost all fruit, shade, and forest trees. See special case containing stages and illustrations.)

For life history and general article see Marlatt, Bul. 14, n. s., Div. Ent., U. S. Dept. Agric., 1898.

Exhibit: Pupa, adult, and enemy *Megastizus speciosus.*

THE BLUE-SPANGLED PEACH-MOTH.

Haploa lecontei Boisd.

(Formerly *Callimorpha.*)

For general account see Saunders, Insects Injurious to Fruit, 2d edit., pp. 197–199, 1900.

Exhibit: Adult.

THE PEACH-TWIG MOTH.

Anarsia lineatella Zell.

For general article with bibliography see Marlatt, Bul. 10, n. s., Div. Ent., U. S. Dept. Agric., pp. 7–20, 1898.

Exhibit: Pupa, adult, work, and figure.

THE INDIAN FRUIT-FLY.

Ceratitis capitata Wied.

For general article see Riley, Rpt. U. S. Dept. Agric., 1890, pp. 255–257.

Exhibit: Pupa, adult, and figure.

THE PEACH SCALE.

Eulecanium persicæ Fabr.

(Food plants: Peach, plum, quince, etc.; formerly a Lecanium. See under "More important scale insects.")

For bibliography, food plants, and distribution see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 191–193, 1903.

EXHIBIT: Infested twig.

PUTNAM SCALE; CRANBERRY SCALE.

Aspidiotus ancylus Putn.

(Food plants: Apple, apricot, box-elder, cottonwood, cranberry, elm, hemlock, maple, oak, peach, pear, plum, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 252–253, 1903.

EXHIBIT: Infested twig.

THE SAN JOSE SCALE.

Aspidiotus perniciosus Comst.

(Food plants: Almond, apple, apricot, birch, black walnut, black currant, catalpa, chestnut, crab-apple, crab-grass, cherry, grape, hickory, oak, peach, pear, persimmon, plum, poplar, prune, Rocky Mountain cherry, rose, silver maple, willow, and many other plants. See under "More important scale insects."

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 271–275, 1903; Howard and Marlatt, Bul. 3, n. s., Div. Ent., U. S. Dept. Agric., 1896, 80 pp.

EXHIBIT: Infested twig.

THE CHERRY LEAF-BEETLE.

Galerucella cavicollis Lec.

For general article and distribution see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 90–93, 1899.

EXHIBIT: Adult.

THE CHERRY-FRUIT MAGGOT.

Rhagoletis cingulata Loew.

For detailed account see Slingerland, Bul. 172, Cornell Univ. Agr. Exp. Sta., 41 pp., 6 figs., 1899; Chittenden, Bul. 44, Div. Ent., U. S. Dept. Agric., p. 70–75, 1904.

EXHIBIT: Adult.

INSECTS INJURIOUS TO PEAR.

(Many of the insects injuring the apple will be found attacking the pear.)

THE FRUIT-TREE BARK-BEETLE.

Scolytus rugulosus Ratz.

For general account see Chittenden, Cir. 29, Div. Ent., U. S. Dept. Agric., 1898.

EXHIBIT: Adult, work, and figure.

PEAR-BLIGHT BEETLE; SHOT-BORER.

Xyleborus pyri Peck.

(Formerly *X. dispar.*)

For general account see Hubbard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 22–23, 1897.

EXHIBIT: Adult, work, and figure.

THE PEAR BLISTER MITE.

Eriophyes pyri Pagenst.

For detailed account see Slingerland, Bul. 61, Cornell Univ. Agr. Exp. Sta., pp. 317–328, figs., 1893.

EXHIBIT: Work and figure.

THE PEAR PSYLLA.

Psylla pyri Linn.

For general accounts see Slingerland, Bul. 44, Cornell Univ. Agr. Sta., 1892; Marlatt, Cir. 7, Div. Ent., U. S. Dept. Agric., 1895.

EXHIBIT: Adult and figure.

THE PEAR SLUG.

Eriocampoides limacina Ratz.

(Formerly *Eriocampa cerasi.*)

For general account see Marlatt, Cir. 28, Div. Ent., U. S. Dept. Agric., 1897.

EXHIBIT: Adult, work, and figure.

THE SCURFY BARK-LOUSE.

Chionaspis furfura Fitch.

(Food-plants: Apple, cherry, currant, elm, pear, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 217-219, 1903; Howard, Yearbook, U. S. Dept. Agric., 1894, pp. 259–261, figs.; Banks, Bul. 34, Div., Ent., U. S. Dept. Agric., p. 14, 1902.

EXHIBIT: Infested twig.

SINUATE PEAR-BORER.

Agrilus sinuatus Oliv.

For general accounts see Smith, Rpt. Entom. N. J. Agr. Exp. Sta. f. 1894, pp. 556–561, 1895; Banks, Bul. 34, Div. Ent., U. S. Dept. Agric., pp. 40–41, 1902.

EXHIBIT: Adult and figure.

INSECTS INJURIOUS TO PLUM.

THE PLUM CURCULIO.

Conotrachelus nenuphar Hbst.

For general account and bibliography see Lintner, 7th Rpt. N. Y. St. Ent., pp. 288–296, 1891.

EXHIBIT: Adult, figure, and enemies, *Aspidoglossa subangulata*, *Chauliognathus pennsylvanicus*, *Harpalus caliginosus*, and parasite *Sigalphus curculionis*.

THE PLUM GOUGER.

Anthonomus prunicida Walsh.

(Formerly *Coccotorus*.)

For general accounts see Riley and Howard, Insect Life, v. II, pp. 258–259, 1890; Gillette, Bul. 47, Colo. Agr. Exp. Sta., pp. 20–22, 1898.

EXHIBIT: Adult, work, and figure.

THE HOP PLANT-LOUSE.

Phorodon humuli Schr.

(Attacks hop and plum.)

For full life history see Riley, Cir. 2, Div. Ent., U. S. Dept. Agric., 1891.

EXHIBIT: Adult and work.

FORBES' SCALE; CHERRY SCALE.

Aspidiotus forbesi Johns.

(See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 259–260, 1903.

EXHIBIT: Infested twig.

INSECTS LIABLE TO BE DISTRIBUTED ON NURSERY STOCK.

See Banks, Bul. 34, Div. Ent., U. S. Dept. Agric., 46 pp., 1902.

THE PEACH SCALE.

Eulecanium persicæ Fab.

(Food plants: Peach, plum, quince, etc.: formerly *Lecanium*. See under "More important scale insects.")

For bibliography, food plants, and distribution see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 191–193, 1903.

EXHIBIT: Infested twig.

OYSTER-SHELL BARK-LOUSE.

Lepidosaphes ulmi Linn.

(Attacks principally apple, currant, Cornus, cottonwood, lilac, pear, sassafras, etc.; formerly *Mytilaspis pomorum* Bouché. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 314–317, 1903.

Exhibit: Infested twig.

THE SCURFY BARK-LOUSE.

Chionaspis furfura Fitch.

(Food plants: Apple, cherry, currant, elm, pear, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 217–219, 1903; Howard, Yearbook, U. S. Dept. Agric., 1894, pp. 259–261, fig.

Exhibit: Infested twig.

THE SAN JOSE SCALE.

Aspidiotus perniciosus Comst.

(Food-plants: Almond, apple, apricot, birch, black walnut, black currant, catalpa, chestnut, crab-apple, crab-grass, cherry, grape, hickory, oak, peach, pear, persimmon, plum, poplar, prune, Rocky Mountain cherry, rose, silver maple, willow, and many other plants. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 271–275, 1903; Howard and Marlatt, Bul. 3, n. s., Div. Ent., U. S. Dept. Agric., 1896. 80 pp.

Exhibit: Infested twig.

PUTNAM SCALE; CRANBERRY SCALE.

Aspidiotus ancylus Putn.

(Food-plants: Apple, apricot, box-elder, cottonwood, cranberry, elm, hemlock, maple, oak, peach, pear, plum, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 252–253, 1903.

Exhibit: Infested twig.

THE CHERRY SCALE; FORBES' SCALE.

Aspidiotus forbesi Johns.

(Food-plants: Apple, cherry, currant, honey locust, peach, pear, plum, walnut, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 259–260, 1903.

Exhibit: Infested twig.

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THE WALNUT SCALE.

Aspidiotus juglans-regiæ Comst.

(Food-plants: Ash, cherry, crab-apple, currant, English walnut, locust, peach, pear, prune, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 265, 1903.

EXHIBIT: Infested twig.

THE GREEDY SCALE.

Aspidiotus rapax Comst.

(Food-plants: Cottonwood, maple, olive, pear, quince, apple, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 276–278, 1903.

EXHIBIT: Infested twig.

THE EUROPEAN FRUIT SCALE.

Aspidiotus ostreæformis Curt.

(Food-plants: Apple, cherry, maple, oak, peach, pear, etc. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 268–270, 1903.

EXHIBIT: Infested twig.

THE WEST INDIAN PEACH SCALE.

Diaspis pentagona Targ.

(Formerly *D. lanatus*. See under "More important scale insects.")

For bibliography and partial list of food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 234–235, 1903; Riley and Howard, Insect Life, v. VI, pp. 287–295, figs., 1894.

EXHIBIT: Infested twig.

THE ROSE SCALE.

Aulacaspis rosæ Bouché.

(Food-plants: Blackberry, mango, myrtle, pear, raspberry, rose, Cycas, Ailanthus, etc. See under "More important scale insects.")

For bibliography see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 236, 1903.

EXHIBIT: Infested twig.

THE WOOLLY APPLE APHIS.

Schizoneura lanigera Hausm.

For general account see Marlatt, Cir. 20, Div. Ent., U. S. Dept. Agric., 1897.

EXHIBIT: Infested roots, twigs, and figure.

THE BLACK PEACH APHIS.

Aphis persicæ-niger Sm.

Original description E. F. Smith, Ent. Amer., pp. 101–103, 1890.

For general account see Slingerland, Bul. 49, Cornell Univ. Agr. Expt. Sta., pp. 427–433, figs. 1892.

Exhibit: Figure.

APPLE-TREE APHIS.

Aphis mali Fitch.

For general account separating species occurring on apple see Pergande, Bul. 44, Div. Ent., U. S. Dept. Agric., pp. 5–23, 1904.

For general account see Smith, Bul. 14, N. J. Agr. Expt. Sta., 1900.

Exhibit: Figure.

THE BUFFALO TREE-HOPPER.

Ceresa bubalus Say.

For general account see Marlatt, Cir. 23, Div. Ent., U. S. Dept. Agric., 1897.

Exhibit: Adult and figure.

APPLE-TREE TENT-CATERPILLAR.

Malacosoma americana Fab.

(Formerly *Clisiocampa.*)

For life history and bibliography see Felt, 14th Rpt. N. Y. St. Ent., pp. 177–190, 1898.

Exhibit: Adult and figure.

THE FALL WEB-WORM.

Hyphantria cunea Dru.

For general account see Howard, Farmers' Bul. 99, U. S. Dept. Agric., pp. 20–25, 1899.

Exhibit: Adult.

THE BROWN-TAIL MOTH.

Euproctis chrysorrhœa Linn.

For life history and general article see Fernald and Kirkland, Spec. Bul. Hatch Expt. Sta., Mass., pp. 15, 1 fig., 3 pls., 1898.

Exhibit: Larva and adult.

THE WHITE-MARKED TUSSOCK-CATERPILLAR.

Hemerocampa leucostigma S. & A.

(Larvæ feed extensively upon fruit and shade trees, and often damage shrubs and vines; see special case containing life history and parasites.)

For general account of this insect and its parasites see Howard Tech. ser., 5, Div. Ent., U. S. Dept. Agric., 1897; for life history, Howard, Farmers' Bul. 99, pp. 12–20, 1899.

Exhibit: Larva and adult.

THE LEAF CRUMPLER.

Mineola indiginella Zell.

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 211–213, 1899.

Exhibit: Larva and adult.

THE GYPSY MOTH.

Porthetria dispar Linn.

For life history, habits, and general account see Forbush and Fernald, The Gypsy Moth, pp. 495+i–c, 1896. (Formerly *Ocneria.*)

Exhibit: Larva, adult, and figure.

THE SPRING CANKER-WORM.

Paleacrita vernata Peck.

For general account see Coquillett, Cir. 9, Div. Ent., U. S. Dept. Agric., pp. 1–3, 1895.

Exhibit: Adult and figure.

THE FALL CANKER-WORM.

Alsophila pometaria Harr.

(Formerly *Anisopteryx.*)

For general account see Coquillett, Cir. 9, Div. Ent., U. S. Dept. Agric., pp. 3–4, 1895.

Exhibit: Eggs, adult, and figure.

THE PEACH-TREE BORER.

Sanninoidea exitiosa Say.

(Formerly *Sannina.*)

For general account see Marlatt, Cir. 17, Div. Ent., U. S. Dept. Agric., 1896.

Exhibit: Adult and figure.

THE PEACH-TWIG MOTH.

Anarsia lineatella Zell.

For general article with bibliography see Marlatt, Bul. 10, n. s., Div. Ent., U. S. Dept. Agric., pp. 7–20, 1898.

Exhibit: Adult.

EYE-SPOTTED BUD-MOTH.

Tmetocera ocellana Schiff.

(Feeds on buds and young leaves.)

For general account see Slingerland, Bul. 50, Cornell Univ. Agric. Expt. Sta., 1893.

Exhibit: Adult and figure.

THE COMMON BAGWORM.

Thyridopteryx ephemeræformis Steph.

For general account see Packard, 5th Rpt. U. S. Ent. Comm., pp. 258–262, 1890.

Exhibit: Adult, cocoon, and figure.

THE APPLE-TWIG BORER.

Amphicerus bicaudatus Say.

For general account see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., pp. 11–13, figure, 1898.

EXHIBIT: Adult and figure.

ROUND-HEADED APPLE-TREE BORER.

Saperda candida Fab.

For general account see Chittenden, Cir. 32, Div. Ent., U. S. Dept. Agric., pp. 1–8, 1898.

EXHIBIT: Adult and figure.

FLAT-HEADED APPLE-TREE BORER.

Chrysobothris femorata Fab.

For general account see Chittenden, Cir. 32, Div. Ent., U. S. Dept. Agric., pp. 9–12, 1898.

EXHIBIT: Adult and figure.

FRUIT-TREE BARK BEETLE; SHOT-HOLE BORER.

Scolytus rugulosus Ratz.

For general account see Chittenden, Cir. 29, Div. Ent., U. S. Dept. Agric., 1898.

EXHIBIT: Adult and figure.

THE PEAR PSYLLA.

Psylla pyri Linn.

For general accounts see Slingerland, Bul. 44, Cornell Univ. Agr. Expt. Sta., 1892; Marlatt, Cir. 7, Div. Ent., U. S. Dept. Agric., 1895.

EXHIBIT: Figure.

THE PEAR BLISTER MITE.

Eriophyes pyri Pagenst.

For detailed account see Slingerland, Bul. 61, Cornell Univ. Agr. Expt. Sta., pp. 317–328, figures, 1893.

EXHIBIT: Work and figure.

INSECTS INJURIOUS TO GRAPE.

For the more important grape insects see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., 1898; Saunders, Insects Injurious to Fruit, 2d edition, pp. 227–302, 1900; Bruner, Nebr. State Hortic. Soc. Rept. f. 1895, pp. 69–162, 1896.

INJURING THE ROOTS.

THE TILE-HORNED PRIONUS.

Prionus imbricornis Linn.

For general account of *Prionus* species see Lugger, 5th Rpt. St. Ent. Minn., pp. 110–111, 1899.

EXHIBIT: Adult.

THE GRAPEVINE ROOT-BORER.

Memythrus polistiformis Harr.

(Formerly *Sciapteron.*)

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 55–57, 1899.

EXHIBIT: Figures.

INJURING LEAVES AND ROOTS.

GRAPE PHYLLOXERA.

Phylloxera vastatrix Planch.

For general article see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., pp. 4–9, figs., 1898.

EXHIBIT: Work and figure.

INJURING THE STEMS AND BRANCHES.

COTTONY MAPLE SCALE.

Pulvinaria innumerablis Rathv.

(Foot-plants: Alder, apple, box-elder, elm, grape, linden, maples, pear, willow, etc. See under "More Important Scale Insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 134–135, 1903; Howard, Bul. 22, n. s., Div. Ent., U. S. Dept. Agric., pp. 8–16, figs. 4, 1900.

EXHIBIT: Infested twig.

THE GRAPE SCALE.

Aspidiotus uvæ Comst.

(Food-plants: Ampelopsis, grape, hickory.)

For bibliography see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 280, 1903.

EXHIBIT: Infested twig.

THE APPLE TWIG-BORER.

Amphicerus bicaudatus Say.

For general account see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., pp. 11–13, figure, 1898.

EXHIBIT: Adult and figure.

RED-SHOULDERED TWIG-BORER.

Sinoxylon basilare Say.

For general account see Lugger, 5th Rpt. St. Ent. Minn., pp. 70–72, 1899.

EXHIBIT: Adult and figure.

THE SNOWY TREE-CRICKET.

Œcanthus niveus DeG.

For general account see Lugger, 3d Rpt. St. Ent. Minn., pp. 269–271, 1898.

EXHIBIT: Adult and figure.

ŒCANTHUS LATIPENNIS Riley.

For brief article see Lugger, 3d Rpt. St. Ent. Minn., p. 273, 1898.

Exhibit: Adult.

GRAPE-VINE ROOT-WORM.

Fidia viticida Walsh.

For life history and bibliography see Felt, Bul. 72, N. Y. St. Museum, 1903, 55 pp., with colored plate.

Exhibit: Adult and figure.

GRAPE-VINE FIDIA.

Fidia longipes Mels.

Exhibit: Adult.

INJURING THE LEAVES.

ACHEMON SPHINX.

Pholus achemon Dru.

(Formerly *Philampelus.*)

For general account see Lugger, 4th Rpt. State Ent. Minn., pp. 38–40, 1899.

Exhibit: Larva and adult.

GRAPE-VINE HOG-CATERPILLAR.

Ampelophaga myron Cram.

For general account see Lugger, 4th Rpt. State Ent. Minn., pp. 42–45, 1899.

Exhibit: Larva and adult.

ABBOT'S SPHINX.

Sphecodina abbotii Swaine.

(Formerly *Thyreus.*)

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 32–33, 1899.

Exhibit: Larva and adult.

LARGE BEAUTIFUL WOOD NYMPH.

Euthisanotia grata Fabr.

(Formerly *Eudryas.*)

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 69–71, 1899.

Exhibit: Larva and adult.

SMALL BEAUTIFUL WOOD NYMPH.

Euthisanotia unio Hübn.

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 71–72, 1899.

Exhibit: Larva and adult.

EIGHT-SPOTTED FORESTER.

Alypia octomaculata Fab.

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 66–67, 1899.

EXHIBIT: Larva and adult.

SOCIAL GRAPE CATERPILLAR.

Harrisina americana Guer.

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 72–74, 1899. (Formerly *Procris.*)

EXHIBIT: Adult and figure.

GRAPE LEAF-FOLDER.

Desmia funeralis Hübn.

For general account see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., pp. 16–17, 1898.

EXHIBIT: Larva, adult, and work.

GRAPE-VINE PLUME-MOTH.

Oxyptilus periscelidactylus Fitch.

For general article see Lugger, 4th Rpt. St. Ent. Minn., pp. 221–222, 1899; for bibliography and article see Lintner, 12th Rpt. St. Ent. N. Y., pp. 218–222, 1897.

EXHIBIT: Larva and adult.

GRAPE-VINE SAWFLY.

Blennocampa pygmaea Say.

For general articles see Harris, Insects Injurious to Vegetation, pp. 522–525; Beach, Lowe and Stewart, Bul. 170, N. Y. Agric. Expt. Sta., p. 417, 1899.

EXHIBIT: Adult and figure.

GRAPE-VINE FLEA-BEETLE.

Haltica chalybea Illig.

For general articles see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., pp. 13–14, 1898; Slingerland, Bul. 157, Cornell Univ. Agr. Expt. Sta. N. Y., 1898. For additional food plants see Lugger, 5th Rpt. St. Ent. Minn., pp. 157–159, 1899.

EXHIBIT: Adult and figure.

THE GRAPE-VINE COLASPIS.

Colaspis brunnea Fab.

For general article see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 13–14, 1903.

EXHIBIT: Adult.

THE VARIED ANOMALA.

Anomala varians Burm.

EXHIBIT: Adult.

THE GRAPE-VINE LEAF-HOPPER.

Typhlocyba comes Say.

For general article see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., pp. 18–20, 1898, under *Typhlocyba vitifex*. For full life history and general account see Slingerland, Bul. 215, Cornell Univ. Agr. Expt. Sta., 1904.

EXHIBIT: Adult and figure.

THE WAVED SHARP-SHOOTER.

Oncometopia undata Fab.

(Formerly *Proconia*.)

For general article see Lugger, 6th Rpt. St. Ent. Minn., pp. 136–137, 1900.

EXHIBIT: Adult.

INJURING THE FRUIT.

THE GRAPE-SEED WORM.

Isosoma vitis Saunders.

For general account see Saunders, Insects Injurious to Fruits, 2d ed., pp. 296–297, 1900.

EXHIBIT: Adult.

THE GRAPE FRUIT-MOTH.

Polychrosis botrana Schiff.

(Formerly *Eudemis*.)

For general article see Marlatt, Farmers' Bul. 70, U. S. Dept. Agric., pp. 20–22, 1898.

EXHIBIT: Adult and figure.

THE GRAPE SEED-WEEVIL.

Craponius inæqualis Say.

For general accounts see Saunders, Insects Injurious to Fruits, 2d ed., pp. 300–301, 1900; Lintner, 9th Rpt. N. Y. St. Ent., pp. 364–365, 1893.

EXHIBIT: Adult and figure.

INSECTS INJURIOUS TO COTTON.

For general articles on cotton insects see Howard, The Cotton Plant, Bul. 33, Office Expt. Sta., U. S. Dept. Agric., pp. 317–350, 1896; Farmers' Bul. 47, U. S. Dept. Agric., 1897; Ashmead, Insect Life, v. VII, pp. 25–29, 240–247, 1894, and pp. 320–326, 1895.

NOTABLY INJURIOUS.

COTTON BOLLWORM; CORN-EAR WORM.

Heliothis obscura Fab.

(Formerly *H. armiger*. Larvæ feed on bolls of cotton, ears of corn, tobacco buds, beans, and in tomatoes; also cut off young plants of various garden crops.)

For full life history and general account see Quaintance, Farmers' Bul. 191, U. S. Dept. Agric., 1904.

EXHIBIT: Larva, pupa, adult, work in cotton bolls, and illustrations of different stages, and work on various plants. Parasite exhibited: *Archytas piliventris;* adult, pupa, and figure. Enemies exhibited: *Calosoma lugubre*, *C. Sayi*, *C. scrutator* Fab., *Polistes annularis*, and *P. rubiginosus* Lep.

MEXICAN COTTON BOLL WEEVIL.

Anthonomus grandis Boh.

(Breeds in and destroys bolls.)

For full life history and general account see Hunter and Hinds, Bul. 45, Div. Ent., U. S. Dept. Agric., 1904; also Hunter, Farmers' Bul. 189, 1904.

EXHIBIT: Life history (larvæ, pupæ, adults, injured cotton bolls, with stages present in bolls, and uninjured bolls); illustrations and map showing distribution in United States.

THE COTTON WORM.

Alabama argillacea Hübn.

(Formerly *Aletia xylina.* Larvæ feed on the leaves.)

For life history and general account see Howard, The Cotton Plant, Bul. 33, Office Expt. Stations, U. S. Dept. Agric., pp. 320–328, 1896.

EXHIBIT: Larva, pupa, cocoon, adult, and figure.

RED BUG; COTTON-STAINER.

Dysdercus suturellus H.-Schf.

(Punctures boll and seeds, aborting them and staining fibers an indelible red or yellow color.)

EXHIBIT: Nymph, adult, work, and figure.

GLASSY-WINGED SHARPSHOOTER.

Homalodisca coagulata Say.

(Punctures stalk, leaves, and flowers; oviposits in forms and squares; very abundant.

EXHIBIT: Nymph, adult, and figure.

COTTON APHIS.

Aphis gossypii Glover.

(Punctures leaves and young bolls; late in season causes falling of young bolls.)

See Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 58–61, 1903.

EXHIBIT: Adult, work, and figure.

LEAF-CUTTING ANT.

Atta fervens Say.

(Cleans up plants, cotton worms, and pupæ.)

EXHIBIT: Adult.

THE AMERICAN LOCUST.

Schistocerca americana Dru.

For life history and general account see Howard, Insect Life, v. VII, pp. 220–229, 1894; Morgan, Bul. 30, n. s., Div. Ent., U. S. Dept. Agric., p. 27, 1901.

EXHIBIT: Nymph and adult.

THECLA PŒAS Hubn.

(Larvæ feed on or bore into bolls, and also feed on leaves.)

For brief account see Mally, Bul. 29, Div. Ent., Dept. Agric., pp. 29–30, 1893.

EXHIBIT: Adult and work.

COTTON SNOUT-MOTH.

Platynota sentana Clem.

(Attacks forms and squares; afterwards feeds on leaves.)

EXHIBIT: Adult.

RASPBERRY SNOUT-MOTH.

Platynota rostrana Walk.

(Larvæ bore into young bolls.)

EXHIBIT: Adult.

COTTON-BOLL CUTWORM.

Prodenia ornithogalli Guen.

(Works as the boll-worm; feeds on bolls and squares.)

For life history, general account, and distribution see Chittenden, Bul. 27, n. s., Div. Ent. U. S. Dept. Agric., pp. 64–71, 1901.

EXHIBIT: Adult.

SHAGREENED CUTWORM.

Feltia malefida Guen.

(Larvæ destroy young plants.)

EXHIBIT: Adult.

OCCASIONALLY INJURIOUS.

THICK-THIGHED WALKING-STICK.

Diapheromera femorata Linn.

For general account of life history see Howard, The Insect Book, pp. 323–325; fig. 214; pl. 32, fig. 13, 1901.

EXHIBIT: Adult.

LEAF-PALPUS CRICKET.

Phyllopalpus pulchellus Uhl.

(Feeds on petals, corolla, and pollen.)

EXHIBIT: Adult.

AGITATING CRICKET.

Hapithus agitator Uhl.

EXHIBIT: Adult.

BANDED CRICKET.

Nemobius fasciatus DeG.

EXHIBIT: Adult.

TETTIGIDEA LATERALIS Say.

EXHIBIT: Adult.

CONE-HEADED LOCUST.

Conocephalus obtusus Burm.

(Feeds on leaves, eating large pieces out of side and gnawing holes through the middle.)

EXHIBIT: Adult.

OBSCURE GRASSHOPPER.

Schistocerca obscura Burm.

(Feeds upon leaves, and sometimes almost defoliates branches.)

For brief notices see Ashmead, Insect Life, v. VII, p. 26, 1894; Morgan, Bul. 30, n. s., Div. Ent., U. S. Dept. Agric., pp. 27–28, 1901.

EXHIBIT: Adult. (Formerly *Acridium*.)

THREE-SPOTTED SOLDIER-BUG.

Euschistus tristigmus Say.

(Common in cotton; punctures terminal shoots.)

EXHIBIT: Adult.

CHARIESTERUS ANTENNATOR Fab.

(Feeds on juices of cotton plants.)

EXHIBIT: Adult.

SOUTHERN LEAF-FOOTED PLANT-BUG.

Leptoglossus phyllopus Linn.

(Punctures buds and young bolls.)

For life history and general account see Chittenden, Bul. 19, n. s., Div. Ent. U. S. Dept. Agric., pp. 46–48, 1899.

EXHIBIT: Adult.

METAPODIUS FEMORATUS Fab.

(Attacks cotton worms and also punctures young bolls.)

EXHIBIT: Adult.

CALOCORIS RAPIDUS Say.

(Punctures buds and young bolls; causes bolls to "flare" and drop.)

EXHIBIT: Adult.

AULACIZES IRRORATA Fab.

(Common; feeding on stalk, etc.)

EXHIBIT: Adult.

SIX-SPOTTED TREE-HOPPER.

Cicadula sexnotata Fall.

(Feeds on cotton stalks, etc.)

EXHIBIT: Adult.

SCOLOPS SULCIPES Say.

(Punctures stems.)

EXHIBIT: Adult.

ENTILIA SINUATA Fab.

(Punctures terminal shoots.)

For general account see Howard, Bul. 30, n. s., Div. Ent., U. S. Dept. Agric., pp. 75–78, 1901.

EXHIBIT: Adult.

THE PHYLLIRA TIGER-MOTH.

Apantesis phyllira Dru.

(Sometimes locally almost as injurious as the cotton worm.)

EXHIBIT: Adult.

GREAT LEOPARD MOTH.

Ecpantheria deflorata Fab.

(Formerly *E. scribonia* Stäl.)

EXHIBIT: Adult.

ABBOT'S BAGWORM.

Oiketicus abbottii Grote.

EXHIBIT: Adult.

SALT-MARSH CATERPILLAR.

Estigmene acræa Dru.

(Formerly *Leucarctia.*)

For short account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 43–44, fig. 41, 1903.

EXHIBIT: Adult.

YELLOW-BEAR CATERPILLAR.

Diacrisia virginica Fab.

For general account see Lugger, 4th Rpt. State Ent. Minn., pp. 79–81, fig. 78, 1899.

EXHIBIT: Adult.

IO MOTH.

Automeris io Fab.

For general account see Lugger, 4th Rpt. State Ent. Minn., pp. 126–129, fig. 130, and pl. 16, fig. 129, 1899.

EXHIBIT: Adult.

MARGINED LEAF-CHAFER.

Anomala marginata Fab.

For bibliography and general account see Lintner, 10th Rpt. State Ent. N. Y., pp. 411–413, 1895.

EXHIBIT: Adult.

MELANCHOLY SAPCHAFER

Euphoria melancholica Gory.

(Frequents flowers for nectar and sap; exceptionally eats into bolls.)

EXHIBIT: Adult.

THE LIVID WIREWORM.

Monocrepidius lividus DeG.

(Feeds on leaves, blossoms, and squares.)

EXHIBIT: Adult.

LEMA SEX-PUNCTATA Ol.

(Adult feeds on leaves.)

For notice of occurrence on cotton see Ashmead, Insect Life, v. VII, p. 247, 1894.

EXHIBIT: Adult.

THE SOUTHERN CORN LEAF-BEETLE.

Myochrous denticollis Say.

For general account see Webster, Bul. 26, n. s., Div. Ent., U. S. Dept. Agric., p. 87, 1900.

EXHIBIT: Adult.

CRYPTOCEPHALUS CALIDUS Suff.

For notice of occurrence on cotton see Ashmead, Insect Life, v. VII, p. 247, 1894.

EXHIBIT: Adult.

TYPOPHORUS VIRIDICYANEUS Crotch.

(Beetle feeds on young leaves.)

EXHIBIT: Adult.

NODONOTA TRISTIS Ol.

(Gnaws bolls, causing them to drop.)

For list of food-plants see Chittenden, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., p. 61, 1897; for general article see Lugger, 5th Rept. State Ent. Minn., p. 146, 1899.

EXHIBIT: Adult.

ELONGATE FLEA-BEETLE.

Systena elongata Fab.

(On bolls.)

For notice of occurrence on cotton see Ashmead, Insect Life, v. VII, p. 247, 1894.

EXHIBIT: Adult.

THE EGG-PLANT FLEA-BEETLE.

Epitrix fuscula Cr.

For general account see Chittenden, Bul. 19, n. s., Div. Ent., U .S. Dept. Agric., pp. 87–89, 1899.

EXHIBIT: Adult.

BENEFICIAL INSECTS COLLECTED ON COTTON.

For general list of beneficial insects taken on cotton see Ashmead, Insect Life, v. VII, 1895.

CHRYSOPA ATTENUATA Walk.

EXHIBIT: Adult.

PERITHEMIS DOMITIA Dru.

EXHIBIT: Adult.

CAROLINA REAR HORSE.

Stagmomantis carolina Burm.

EXHIBIT: Egg mass and adult.

SINEA DIADEMA Fab.

(Attacks cotton worms and is destructive to other small caterpillars and aphides.)

EXHIBIT: Adult.

WHEEL-BUG.

Arilus cristatus Linn.

(Observed to prey on the cotton worm. Formerly *Prionidus.*)

EXHIBIT: Adult.

ZELUS BILOBUS Say.

(Attacks cotton worm.)

EXHIBIT: Nymph and adult.

APIOMERUS CRASSIPES Fab.

(Observed to attack cotton worms.)

EXHIBIT: Adult.

PHYMATA FASCIATA Gray.

(Attacks cotton worms: also Diptera.)

EXHIBIT: Adult.

SIX-SPOTTED TIGER BEETLE.

Cicindela sexguttata Fab.

EXHIBIT: Adult.

CAROLINA TIGER BEETLE.

Tetracha carolina Linn.

(Feeds occasionally upon cotton worms.)

EXHIBIT: Adult.

SUBTERRANEAN GROUND BEETLE.

Scarites subterraneus Fab.

EXHIBIT: Adult.

PTEROSTICHUS PERMUNDUS Say.

EXHIBIT: Adult.

HELLUOMORPHA TEXANA Lec.

EXHIBIT: Adult.

GALERITA ATRIPES Lec.

EXHIBIT: Adult.

CALLIDA DECORA Fab.

EXHIBIT: Adult.

COCCINELLA SANGUINEA Linn.

(Attacks cotton aphis.)
EXHIBIT: Adult.

COCCINELLA OCULATA Fab.

EXHIBIT: Adult.

TWICE-STABBED LADYBIRD.

Chilocorus bivulnerus Muls.

(Attacks cotton Aleyrodes.)
EXHIBIT: Adult.

COLLOPS QUADRIMACULATUS Fab.

(Feeds on pollen, and probably on small insects.)
EXHIBIT: Adult.

ROBBER FLY.

Erax lateralis Macq.

(Observed to catch bollworm moths on the wing.)
EXHIBIT: Adult.

ASILUS SERICEUS Say.

(Observed to catch moths on the wing.)
EXHIBIT: Adult.

MESOGRAPTA POLITA Say.

(Feeds on aphids.)
EXHIBIT: Adult.

COTTON-WORM TACHINA FLY.

Frontina aletiæ Riley.

EXHIBIT: Adult.

HOLCOCEPHALA ABDOMINALIS Say.

EXHIBIT: Adult.

DIOGMITES DISCOLOR Loew.

EXHIBIT: Adult.

LAPHRIA THORACICA Fab.

EXHIBIT: Adult.

ATOMOSIA PUELLA Wied.

EXHIBIT: Adult.

ROBBER FLY.

Proctacanthus milberti Macq.

(Observed to attack cotton worm.)
EXHIBIT: Adult.

ISODONTIA PHILADELPHICA Lep.

(Preys upon crickets.)
EXHIBIT: Adult.

AMMOPHILA PICTIPENNIS Walsh.

(Preys on caterpillars.)

EXHIBIT: Adult.

POLISTES RUBIGINOSUS Lep.

EXHIBIT: Adult.

COMPSOMERUS QUADRINOTATA Fab.

EXHIBIT: Adult.

LYSIPHLEBUS TESTACEIPES Cress.

(Cotton aphis parasite: "Fairly cleaned cotton of aphids.")

EXHIBIT: Adult.

OPHION BILINEATUS Say.

EXHIBIT: Adult.

SPILOCRYPTUS NUNCIUS Say.

(Bred from cotton worm.)

EXHIBIT: Adult.

SYNTOMOSPHYRUM ESURUS Riley.

(Bred from cotton worm.)

EXHIBIT: Adult.

EUPLECTRUS COMSTOCKII How.

(Bred from cotton worm and boll worm.)

EXHIBIT: Adult.

INSECTS INJURIOUS TO INDIAN CORN.

Treating of injuries to seed in ground and roots see Forbes, 18th Rept. St. Ent. Ill., pp. 7–171, Pls. I–XV, 1894.

For general articles see Webster, 35th Ann. Rpt. Ind. St. Bd. Agric. f. 1885, pp. 180–215, 1886; Bruner, Rpt. Nebr. St. Bd. Agr. f. 1891, pp. 240–309, 1892.

INJURING THE PLANTED SEED.

THE SEED-CORN MAGGOT.

Pegomya fusciceps Zett.

(Formerly *Pegomyia zeæ* Riley.)

For general articles see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 84–92, 1902; Forbes 18th Rpt. St. Ent. Ill., pp. 16–19, 1894.

EXHIBIT: Pupa, adult, and work.

SEED-CORN AGONODERUS.

Agonoderus pallipes Fab.

For general account see Forbes, 18th Rpt. St. Ent. Ill., pp. 12–14, 1894.

EXHIBIT: Adult and work.

LITTLE BLACK ANT.

Prenolepis imparis Say.

(Adults eat sprouting corn; also called *P. nitens* Mayr., which is a European variety of the species.)

EXHIBIT: Adult.

THE SMALL YELLOW ANT.

Solenopsis debilis Mayr.

For general article see Forbes, 18th Rpt. St. Ent. Ill., pp. 9–11, 66, 1894.

EXHIBIT: Adult and figure.

THE VAGABOND CRAMBUS.

Crambus vulgivagellus Clem.

For general account see Lintner, 1st Rpt. St. Ent. N. Y., pp. 127–157, 1882; Felt. Bul. 64, Cornell Univ. Agr. Expt. Sta., pp. 69–71, 1894.

EXHIBIT: Adult and figure.

THE CORN-ROOT WEBWORM.

Crambus zeellus Fern.

(Larvæ feed on roots; when full grown form a webbed cocoon near base of stalk.)

For general account see Forbes, 14th Rpt. St. Ent. Ill., pp. 12–17, 1885.

EXHIBIT: Pupa, cocoon, and adult.

INJURING THE ROOTS AND SEEDS.

THE CORN-ROOT APHIS.

Aphis maidis-radicis Forbes.

For detailed account see Forbes, 18th Rpt. St. Ent. Ill., pp. 58–85, 1894.

EXHIBIT: Adult and figure.

WHITE GRUB; MAY BEETLE.

Lachnosterna fusca Fröh.

For account of white grubs injuring corn see Forbes, 18th Rpt. St. Ent. Ill., pp. 109–145, 1894.

EXHIBIT: Adult.

LACHNOSTERNA GIBBOSA Burm.

For general account of white grubs see Forbes, 18th Rpt. St. Ent. Ill., pp. 109–145, 1894.

EXHIBIT: Adult.

THE WHEAT WIREWORM.

Agriotes mancus Say.

For general account see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 77–78, 1901.

EXHIBIT: Adult and figure.

THE CORN WIREWORM.

Melanotus cribulosus Lec.

For injuries by wire-worms see Forbes, 18th Rpt St. Ent. Ill., pp. 27–51, 1894.

EXHIBIT: Adult and figure.

THE COMMON WIREWORM.

Melanotus communis Gyll.

For injuries by wire-worms see Forbes, 18th Rpt. St. Ent. Ill., pp. 27–51, 1894.

EXHIBIT: Adult.

TWELVE-SPOTTED CUCUMBER-BEETLE.

Diabrotica duodecempunctata Oliv.

For general articles see Forbes, 18th Rpt. St. Ent. Ill., pp. 146–154, 1894; Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 12–13, 1903; Quaintance, Bul. 26, n. s., Div. Ent., U. S. Dept. Agric., pp. 35 40, 1900.

EXHIBIT: Adult and figure. (See also, under "Injuring the Ears.")

THE NORTHERN CORN ROOT-WORM.

Diabrotica longicornis Say.

For general account see Forbes, 18th Rpt. St. Ent. Ill., pp. 154–165, 1894.

EXHIBIT: Adult and figure.

INJURING THE YOUNG PLANT.

CORN BILL-BUGS.

For general articles on corn bill-bugs see Forbes, 16th Rpt. St. Ent. Ill., pp. 58–74, 1890; Bul. 79, Ill. Agr. Expt. Sta., 27 pp. 1902.

THE CLAY-COLORED BILL-BUG.

Sphenophorus æqualis Linn.

(Treated as *S. ochreus* Lec, by Forbes, l. c.)

EXHIBIT: Adult and figure.

NORTHERN CORN BILL-BUG.

Sphenophorus zeæ Walsh.

(Generally called by authors *S. sculptilis.*)

EXHIBIT: Adult and work.

THE TENACIOUS BILL-BUG.

Sphenophorus pertinax Oliv.

EXHIBIT: Adult.

THE BLUE-GRASS BILL-BUG.

Sphenophorus parvulus Gyll.

EXHIBIT: Adult.

THE CALLOUSED BILL-BUG.

Sphenophorus callosus Oliv.

EXHIBIT: Adult.

THE FALL ARMY WORM.

Laphygma frugiperda S. & A.

(Larvæ feed on leaves, burrow in young plants, and later leaves and forming ears are damaged.)

For full life history and bibliography see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 13–45, 1901.

EXHIBIT: Larva and adult.

THE ARGE TIGER MOTH.

Apantesis arge Dru.

For brief account see Bruner, Rpt. Nebr. St. Bd. Agr. 1891, p. 244, 1892. (Formerly *Arctia.*)

EXHIBIT: Larva, pupa, and adult.

YELLOW-BEAR CATERPILLAR.

Diacrisia virginica Fab.

For general account see Lugger, 4th Rpt. State Entom. Minn., pp. 79–81, fig. 78, 1899. (Formerly *Spilosoma.*)

EXHIBIT: Larva, cocoon, and adult.

SALT-MARSH CATERPILLAR.

Estigmene acræa Dru.

For short account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 43–44, fig. 41, 1903. (Formerly *Leucarctia.*)

EXHIBIT: Larva and adult.

THE SADDLE-BACK CATERPILLAR.

Sibine stimulea Clem.

For general account see Lugger, 4th Rpt. State Ent. Minn., pp. 98–99, 1899. (Formerly *Empretia.*)

EXHIBIT: Larva, pupa, cocoon, and adult.

THE DARK-SIDED CUTWORM.

Euxoa messoria Harr.

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 290–291, 1885. (Formerly *Carneades.*)

EXHIBIT: Larva, adult, and figure.

THE BRONZED CUTWORM.

Nephelodes minians Guen.

For life history and partial bibliography see Lintner, 1st Rpt. St. Ent. N. Y., pp. 99–110, 1882; Riley, Rpt. U. S. Dept. Agric., 1890, pp. 244–246, 1891.

EXHIBIT: Adult.

THE W-MARKED CUTWORM.

Noctua clandestina Harr.

For general account see Slingerland, Bul. 104, Cornell Univ. Agr. Expt. Sta., pp. 571–574, 1895.

EXHIBIT: Larva and adult.

THE SPOTTED CUTWORM.

Noctua c-nigrum Linn.

For general account and life history see Chittenden, Bul. 27, n. s., Div. Ent. U. S. Dept. Agric., pp. 54–58, 1901.

EXHIBIT: Larva, pupa, adult, and figure.

THE VARIEGATED CUTWORM.

Peridroma saucia Hübn.

For general bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent. U. S. Dept. Agric., pp. 46–64, 1901.

EXHIBIT: Adult and figure.

THE GLASSY CUTWORM.

Hadena devastatrix Brace.

For general account see Riley, Rpt. U. S. Dept. Agric. 1884, pp. 296–297, 1885.

EXHIBIT: Adult.

THE BLACK CUTWORM.

Agrotis ypsilon Rott.

For general account see Riley, Rpt. U. S. Dept. Agric. 1884, pp. 294–295, 1895.

EXHIBIT: Larva, adult and figure.

WESTERN STRIPED CUTWORM.

Feltia herilis Grote.

For short account see Riley, 1st Rpt. St. Ent. Mo., pp. 81–82, 1869; Forbes: 16th Rpt. St. Ent. Ill., p. 89, 1894.

EXHIBIT: Larva and adult.

THE DINGY CUTWORM.

Feltia subgothica Haw.

For general articles see Chittenden, Yearbook, U. S. Dept. Agric., 1898, p. 257. Slingerland, Bul. 104, Cornell Univ. Agr. Expt. Sta., pp. 574–579, 1895.

EXHIBIT: Larva, adult and figure.

INJURING THE STALK.

THE SPINDLE WORM.

Achatodes zeæ Harr.

For brief accounts see Harris, Ins. Inj. to Veg., Flint Ed., pp. 438–439, 1862; Webster, 35th Ann. Rpt. Ind. St. Bd. Agric., f. 1885, p. 193, 1886.

EXHIBIT: Adult and work.

SMALLER CORN STALK-BORER.

Elasmopalpus lignosellus Zell.

For life-history and general account see Chittenden, Bul. 23, n. s., Div. Ent. U. S. Dept. Agric. pp. 17–22, 1900.

EXHIBIT: Adult work and cocoon.

THE STALK BORER.

Papaipema nitela Guen.

(Formerly *Gortyna* and *Hydræcia.*)

For general accounts see Bird, Can. Ent., v. XXX, pp. 127–128, 1898; Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 11–12, fig. 2, 1902.

EXHIBIT: Adult.

CORN STALK-BORER; SUGAR-CANE BORER.

Diatræa saccharalis Fab.

For full life-history and general account see Howard, Insect life, v. IV, pp. 95–103, 1891.

EXHIBIT: Eggs, larva, pupa, adult, and work.

INJURING THE LEAVES.

THE LESSER LOCUST.

Melanoplus atlanis Riley.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 178–183, pl. 12, fig. 7, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 26–27, 1891.

EXHIBIT: Adult.

THE TWO-STRIPED LOCUST.

Melanoplus bivittatus Say.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 363–368, pl. 24, fig. 5, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 31–32.

EXHIBIT: Adult.

THE DIFFERENTIAL LOCUST.

Melanoplus differentialis Thos.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 349–354, pl. 23, figs. 3 and 4, 1897; also Morgan, Bul. 30, n. s., Div. Ent., U. S. Dept. Agric., pp. 7–26, 1901.

EXHIBIT: Adult.

RED-LEGGED LOCUST.

Melanoplus femur-rubrum DeG.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 278–285, pl. 1, fig. h., pl. 19, figs. 1–4, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 27–28, 1891.

EXHIBIT: Adult.

THE ROCKY-MOUNTAIN LOCUST.

Melanoplus spretus Thos.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 184–190, pl. 12, fig. 8, 1897; also Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 7–26, 1891.

Exhibit: Adult.

THE AMERICAN LOCUST.

Schistocerca americana Dru.

For life history and general account, Howard, Insect Life, v. VII, pp. 220–229, 1894; also Morgan, Bul. 30, n. s., Div. Ent., U. S. Dept. Agric., p. 27, 1901.

Exhibit: Adult.

THE CORN APHIS.

Aphis maidis Fitch.

For general account see Forbes, 13th Rpt. St. Ent. Ill., pp. 43–50, 1884.

Exhibit: Figure.

THE BARRED-WINGED ONION MAGGOT.

Chætopsis ænea Wied.

For general accounts see Howard, Insect Life, v. VII, pp. 352–354, 1895; Pettit, Bul. 200, Mich. Agr. Exp. Sta., pp. 206–208, 1902.

Exhibit: Puparium and adult.

THE CHINCH BUG.

Blissus leucopterus Say.

(Injures cane, corn, oats, rye, wheat, etc.)

For bibliography, 1786–1888, see Forbes, App. to 16th Rpt. St. Ent. Ill., pp. 1–102, 1894.

For general articles see Forbes, 16th Rpt. St. Ent. Ill., pp. 1–57, 1894; Webster, Bul. 15, n. s., Div. Ent., U. S. Dept. Agric., 82 pp. 1898.

Exhibit: Nymph, adult, and figure.

THE FODDER WORM.

Epizeuxis æmula Hübn.

(Lives especially on leaves of stored fodder.)

For general account see Packard, 5th Rpt. U. S. Ent., Comm., pp. 843–844, 1890.

Exhibit: Larva, pupa, cocoon, adult, and work.

THE ARMY WORM.

Heliophila unipuncta Harv.

(Formerly *Leucania.*)

For bibliography and life history see Lintner, 12th Rpt. St. Ent. N. Y., pp. 190–214, 1896.

Exhibit: Larva and adult.

THE CORN-FEEDING SYRPHUS-FLY.

Mesograpta polita Say.

For general account see Riley and Howard, Insect Life, v. I, pp. 5–8, 1888.

EXHIBIT: Puparia and adult.

THE STRIPED BLISTER BEETLE.

Epicauta vittata Fab.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 22–23, 1903.

EXHIBIT: Pupa, adult, and figure.

BLACK BLISTER BEETLE.

Epicauta pennsylvanica DeG.

(Feed on pollen and flower leaves.)

For brief account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 25, 1903.

EXHIBIT: Adult.

THE GRAY BLISTER BEETLE.

Epicauta cinerea Fors.

For brief account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 24, 1903.

EXHIBIT: Adult.

INJURING THE POLLEN, SILK, AND EARS.

BOLLWORM; CORN-EAR WORM.

Heliothis obscura Fab.

(Formerly *H. armiger* Hübn; see special case.)

For life history and general account see Quaintance, Farmer's Bul. 191, U. S. Dept. Agric., 1904.

EXHIBIT: Adult.

THE BROWN FRUIT-CHAFER.

Euphoria inda Linn.

For life history and general account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 67–74, 1899.

EXHIBIT: Adult and work.

THE ROSE-CHAFER.

Macrodactylus subspinosus Fabr.

For general article and life history see Smith, Bul. 82, N. J. Agric. Expt. Sta., 1891.

EXHIBIT: Adult and figure.

THE RUSTY-BROWN TORTRIX.

Platynota flavedana Clem.

(Larvæ feed in ears of green corn.)

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 231–239, 1899.

EXHIBIT: Pupa and adult.

INSECTS INJURING SUGAR CANE.

THE SUGAR-CANE PIN-BORER.

Xyleborus sacchari Hopk.

For notes, under name of *X. pubescens* Zim., see Riley and Howard, Insect Life, v. IV, p. 402, and v. V, p. 51, 1892.

EXHIBIT: Adult, work, and figure.

HAWAIIAN SUGAR-CANE BORER.

Sphenophorus obscurus Boisd.

For life history and general account see Riley and Howard, Insect Life, v. I, pp. 185–189, 1888.

EXHIBIT: Adult and figure.

THE SUGAR-CANE BEETLE.

Ligyrus rugiceps Lec.

For general account see Howard, Insect Life, v. I, pp. 11–13, 1888.

EXHIBIT: Adult and work.

CORN STALK-BORER; SUGAR-CANE BORER.

Diatræa saccharalis Fab.

For full life history and general account see Howard, Insect Life, v. VI, pp. 95–103, 1891.

EXHIBIT: Larva, pupa, adult, and work.

INSECTS INJURIOUS TO RICE.

THE RICE WEEVIL.

Calandra oryza Linn.

For general account see Chittenden, Farmers' Bul. 45, rev. ed., U. S. Dept. Agric., pp. 5–6, 1897.

EXHIBIT: Adult and figure.

THE RICE GRUB.

Chalepus trachypygus Burm.

For general article see Riley, Rpt. U. S. Dept. Agric., 1881, pp. 128–129, 1882.

EXHIBIT: Adult and figure.

THE RICE STALK-BORER.

Chilo plejadellus Zinck.

For general article under *Chilo oryzæellus* see Riley, Rpt. U. S. Dept. Agric. f. 1881, pp. 133–135, 1882.

EXHIBIT: Larva, adult, work, figure and the parasite *Phora aletiæ* Comst.

THE RICE WATER-WEEVIL.

Lissorhoptrus simplex Say.

For general article see Riley, Rpt. U. S. Dept. Agric. f. 1881, pp. 130–133, 1882.

EXHIBIT: Adult and figure.

THE FALL ARMY WORM.

Laphygma frugiperda S. & A.

For full life history and bibliography see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 13–45, 1901.

EXHIBIT: Larva, pupa, adult, and figure.

INSECTS INJURIOUS TO GRASSES.

APANTESIS NAIS Dru.

(Formerly *Arctia.*)

For account see Beutenmüller, "Cat. Lep. N. Y.," Ann. Acad. N. Y., p. 206, 1890.

EXHIBIT: Adult.

GRANULATED CUTWORM.

Feltia annexa Fr.

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 291–292, 1885. For description and stages see French, Can. Ent., v. XIV, pp. 207–210, 1882.

EXHIBIT: Adult and figure.

HOMOPTERA EDUSA Dru.

EXHIBIT: Larva, pupa, and adult.

NORTHERN GRASS WORM.

Drasteria erechtea Cram.

For general account see Slingerland, Insect Life, v. V, pp. 87–88, 1892.

EXHIBIT: Larva, pupa, adult, and work.

THE ARMY WORM.

Heliophila unipuncta Harv.

(Formerly *Leucania*).

For bibliography and life history see Lintner, 12th Rpt. St. Ent. N. Y., pp. 190–214, 1896.

EXHIBIT: Larva, pupa, adult, and figure.

THE SALT-MARSH CATERPILLAR.

Estigmene acræa Dru.

(Formerly *Leucarctia.*)

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 43–44, 1903.

EXHIBIT: Larva and adult.

FALL ARMY WORM.

Laphygma frugiperda S. & A.

For full bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 40–45, 1901.

EXHIBIT: Larva, pupa, adult, and figure.

THE ISABELLA TIGER MOTH.

Isia isabella S. & A.

(Formerly *Pyrrharctia.*)

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 44–45, 1903.

EXHIBIT: Larva, cocoon, adult and figure.

THE VAGABOND CRAMBUS.

Crambus vulgivagellus Clem.

For general accounts see Lintner, 1st Rpt. St. Ent. N. Y., pp. 127–151, 1882; Felt, Bul. 64, Cornell Univ. Agric. Expt. Sta., pp. 69–71, 1894.

EXHIBIT: Eggs, adult, work, figure, and parasite *Lampronotus frigida* Cr.

THE SPOTTED CUTWORM.

Noctua c-nigrum Linn.

For general account and life history see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 54–58, 1901.

EXHIBIT: Pupa and adult.

WHITE GRUB; MAY BEETLE.

Lachnosterna fusca Fröh.

For account of white grubs see Forbes, 18th Rpt. St. Ent. Ill., pp. 109–145, 1894.

EXHIBIT: Adult.

WHITE GRUB; JUNE BEETLE.

Lachnosterna arcuata Smith.

For general account see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 74–76, 1901.

EXHIBIT: Adult and figure.

THE DISTENDED MAY BEETLE.

Lachnosterna farcta Lec.

For short notices see Comstock, Rpt. U. S. Dept. Agric. 1879, pp. 247–248, Pl. V, fig. 5, 1880, and Howard, Bul. 22, n. s., Div. Ent., U. S. Dept. Agric., p. 107, 1900.

EXHIBIT: Adult.

THE BLUE-GRASS BILL-BUG.

Sphenophorus parvulus Gyll.

For article see Forbes, 16th Rpt. St. Ent. Ill., pp. 63, 65, 1894.

EXHIBIT: Adult.

THE LESSER LOCUST.

Melanoplus atlanis Riley.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 178–183, pl. 12, fig. 7, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 26–27, 1891.

EXHIBIT: Adult.

THE CAROLINA LOCUST.

Dissosteira carolina Linn.

For short account see Forbes and Hart, Bul. 60, Ill. Agric. Expt. Sta., pp. 479–480, 1900.

EXHIBIT: Nymph and adult.

THE TIMOTHY PLANT-BUG.

Oncognathus binotatus Fabr.

For general account see Howard, Insect Life, v. V, pp. 90–92, 1892.

EXHIBIT: Adult.

THE GREATER WHEAT-STEM MAGGOT.

Meromyza americana Fitch.

For general article see Webster, Bul. 42, Div. Ent., U. S. Dept. Agric., pp. 43–51, 1903.

EXHIBIT: Adult and figure.

LEATHER JACKET; MEADOW WORM.

Tipula bicornis Loew.

For general account see Forbes, 16th Rpt. St. Ent. Ill., pp. 78–83, 1890.

EXHIBIT: Adult and figure.

INSECTS INJURIOUS TO ALFALFA.

THE VARIEGATED CUTWORM.

Peridroma saucia Hübn.

For general bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent. U. S. Dept. Agric., pp. 46–64, 1901.

EXHIBIT: Larva and adult.

THE FALL ARMY WORM.

Laphygma frugiperda S. & A.

For full bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent. U. S. Dept. Agric., pp. 40–45, 1901.

EXHIBIT: Larva and adult.

THE ALFALFA WEBWORM.

Loxostege commixtalis Walk.

(Formerly *L. cereralis* Zell.)

For account of *Loxostege* sp. attacking alfalfa see Insect Life, v. VI, pp. 36, 1893.

EXHIBIT: Adult.

THE TWO-STRIPED LOCUST.

Melanoplus bivittatus Say.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 363–368, pl. 24, fig. 5, 1897.

EXHIBIT: Adult and figure.

THE DIFFERENTIAL LOCUST.

Melanoplus differentialis Thos.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 349–354, pl. 23, figs. 3 and 4, 1897; also Morgan, Bul. 30, n. s., Div. Ent. U. S. Dept. Agric., pp. 7–26, 1901.

EXHIBIT: Adult and figure.

THE ROCKY-MOUNTAIN LOCUST.

Melanoplus spretus Thos.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 184–190, pl. 12, fig. 8, 1897.

EXHIBIT: Adult.

THE AMERICAN LOCUST.

Schistocerca americana, Dru.

For life history and general account see Howard, Insect Life, v. VII, pp. 220–229, 1897; also Morgan, Bul. 30, n. s., Div. Ent., U. S. Dept. Agric., p. 27, 1901.

EXHIBIT: Adult.

THE CLOVER-SEED CHALCIS-FLY.

Bruchophagus funebris How.

For general account see Hopkins, Bul. 6, n. s., Div. Ent. U. S. Dept. Agric., p. 73, 1896, and Bul. 17, n. s., p. 45, 1898; Titus, Bul. 44, pp. 77–80, 1904.

EXHIBIT: Adult and work.

INSECTS INJURIOUS TO SMALL GRAINS.

For general articles see Howard, Tech. Ser. 2, Div. Ent. U. S. Dept. Agric., 24 pp., 1896; Marlatt, Farmers' Bul. 132, U. S. Dept. Agric., 38 pp., 1901; Webster, Bul. 42, Div. Ent., U. S. Dept. Agric., 62 pp., 1903.

THE LESSER LOCUST.

Melanoplus atlanis Riley.

For bibliography and general account see Scudder, Proc, U. S. N. M., v. XX, pp. 178–183, pl. 12, fig. 7, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 26–27, 1891.

EXHIBIT: Nymph and adult.

THE RED-LEGGED LOCUST.

Melanoplus femur-rubrum DeG.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 278–285, pl. 1, fig. h; Pl. IX, figs. 1–4, 1897; Riley, Bul. 25, Div. Ent. U. S. Dept. Agric., pp. 27–28, 1891.

Exhibit: Nymph and adult.

THE ROCKY MOUNTAIN LOCUST.

Melanoplus spretus Thos.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 184–190, pl. 12, fig. 8, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 9–26, 1891.

Exhibit: Nymph, adult, and figure.

THE WESTERN CRICKET.

Anabrus purpurascens Uhl.

For detailed account see Packard, 2d Rept. U. S. Ent. Comm., pp. 163–178, 1879.

Exhibit: Adult.

THE CLEAR-WINGED LOCUST.

Camnula atrox Scudd.

For account of an allied species (*C. pellucida*) see Simpson, Circ. 53, Div. Ent., U. S. Dept. Agric., 1903.

Exhibit: Adult.

THE ARMY WORM.

Heliophila unipuncta Harv.

(Formerly *Leucania*.)

For bibliography and life history see Lintner, 12th Rept. St. Ent. N. Y., pp. 190–214, 1896.

Exhibit: Larva, pupa, adult, and figure.

FALL ARMY WORM.

Laphygma frugiperda S. & A.

For full bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 40–45, 1901.

Exhibit: Larva, pupa, and adult.

STALK BORER.

Papaipema nitela Guen.

(Bores in stems of various plants.)

For general account see Bird, Can. Ent., v. XXX, pp. 127–128, 1898.

Exhibit: Larva, pupa, adult, and work.

WHEAT-HEAD ARMY-WORM.

Heliophila albilinea Hübn.

For general account see Riley, 9th Rept. St. Ent. Mo., pp. 50–57, 18.

Exhibit: Pupa, adult, figure, and parasites: *Anomalon apicale* Cress., *Tachina anonyma* Riley.

NUTTALL'S BLISTER BEETLE.

Cantharis nuttalli Say.

For short article see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 27, 1903.

EXHIBIT: Adult.

THE CLAY-COLORED BILL-BUG.

Sphenophorus æqualis Lec.

(Treated as *S. ochreus* Lec. by authors.)

For articles on bill-bugs see Forbes, 16th Rept. St. Ent. Ill., pp. 58–74, 1890; Webster, Insect Life, v. II, pp. 132–134, 1889.

EXHIBIT: Adult.

THE GERMAN GRAIN-LOUSE.

Macrosiphum cerealis Kalt.

(Attacks barley, chess, meadow, orchard, and velvet grass, oats, rye, and wheat, feeding on ears, racemes, and other parts of plant.)

For general account see Pergande, Bul. 44, Div. Ent., U. S. Dept. Agric., pp. 18–21, 1904.

EXHIBIT: Figure.

THE ENGLISH GRAIN-LOUSE.

Macrosiphum granaria Buck.

(Formerly *Nectarophora* and *Aphis*. Attacks green foxtail, meadow, and orchard grass, oats, red-clover, red top, rye, wheat, and wild rye.)

For general account see Pergande, Bul. 44, Div. Ent., U. S. Dept. Agric., pp. 13–18, 1904.

EXHIBIT: Figure and work; parasite, *Lysiphlebus testaceipes* Cress. (figure); and enemies, *Anatis 15-punctata* Ol.; *Coccinella sanguinea* Linn.; *Hippodamia parenthesis* Say; *Podabrus tomentosus* Say; *Sphærophoria cylindrica* Say; *Syrphus americanus* Wied.

THE EUROPEAN GRAIN-LOUSE.

Siphocoryne avenæ Fabr.

(Formerly *Nectarophora* and *Aphis*. Attacks apple, burdock, celery, choke-cherry, dogwood, grasses, oats, rye, wheat, and other plants.)

For general account see Pergande, Bul. 44, Div. Ent., U. S. Dept. Agric., pp. 5–13, 1904.

EXHIBIT: Figure.

THE CHINCH BUG.

Blissus leucopterus Say.

(Injures cane, corn, oats, rye, wheat, etc.)

For bibliography 1785–1888 see Forbes, App. to 16th Rept. St. Ent. Ill., pp. 1–102, 1894. For general articles see Forbes, 16th Rept. St. Ent. Ill., pp. 1–57, 1894; Webster, Bul. 15, n. s., Div. U. S. Dept. Agric., 82 pp., 1898.

EXHIBIT: Eggs, nymph, adult, and figure.

THE GRAIN LEAF-HOPPER.

Diedrocephalus flaviceps Riley.

For account of *D. mollipes* see Osborn & Ball, Bul. 34, Iowa Agric. Expt. Sta., p. 614, 1897.

EXHIBIT: Adult.

THE DESTRUCTIVE LEAF-HOPPER.

Cicadula exitiosa Uhl.

For general account see Comstock, Rpt. U. S. Comm. Agric., 1879, pp. 191–193, 1880.

EXHIBIT: Adult.

THE WHEAT FALSE WORM.

Dolerus arvensis Say.

For general account see Riley and Marlatt, Insect Life, v. IV, pp. 171–172, 1891.

EXHIBIT: Adult and figure.

THE GRASS SAWFLY.

Pachynematus extensicornis Nort.

(Formerly *Nematus marylandicus.*)

For article under *N. marylandicus* see Riley and Marlatt, Insect Life, v. IV, pp. 174–177, 1891.

EXHIBIT: Adult and figure.

THE WESTERN GRAIN SAWFLY.

Cephus occidentalis Marl.

For short article see Riley and Howard, Insect Life, v. II, p. 286, 1890.

EXHIBIT: Adult, work and figure.

JOINT-WORMS.

For special articles to four following species see Howard, Tech. Ser. 2, Div. Ent., U. S. Dept. Agric., 24 pp., 1896; also Webster, Bul. 42, Div. Ent., U. S. Dept. Agric., 62 pp., 1903.

GREATER WHEAT-STRAW WORM.

Isosoma grande Riley.

EXHIBIT: Adult and figure.

BARLEY-STRAW WORM.

Isosoma hordei Harr.

EXHIBIT: Adult, work and figure.

THE WHEAT JOINT-WORM.

Isosoma tritici Riley.

EXHIBIT: Adult, work and figure.

THE HAIRY-FACED JOINT-WORM.

Isosoma hirtifrons How.

EXHIBIT: Adult and figure.

THE HESSIAN FLY.

Mayetiola destructor Say.

(Formerly *Cecidomyia.*)

For general article with bibliography see Osborn, Bul. 16, n. s. Div. Ent., U. S. Dept. Agric., 57 pp., 1898; Marlatt, Farmers' Bul. 132, U. S. Dept. Agric., pp. 13–22, 1901.

EXHIBIT: Puparia, adult, work, figures, and map.

THE GREATER WHEAT-STEM MAGGOT.

Meromyza americana Fitch.

For general article see Webster, Bul 42, Div. Ent., U. S. Dept. Agric., pp. 43–51, 1903.

EXHIBIT: Adult, work and figure.

THE AMERICAN FRIT-FLY.

Oscinis soror Macq.

For general article see Webster, Bul. 42, Div. Ent., U. S. Dept. Agric., pp. 57–62, 1903.

EXHIBIT: Adult, work, and figure.

THE LESSER WHEAT-STRAW MAGGOT.

Oscinis carbonaria Loew.

For general article see Webster, Bul. 42, Div. Ent., U. S. Dept. Agric., pp. 51–56, 1903.

EXHIBIT: Adult.

CHLOROPS PROXIMA Say.

For short account see Comstock, Rpt. U. S. Comm. Agric., 1879, pp. 257–258, 1880.

EXHIBIT: Adult and work.

INSECTS INJURIOUS TO HOPS.

THE HOP PLANT-LOUSE.

Phorodon humuli Schr.

(Attacks hop and plum.)

For full life history see Riley, Cir. 2, Div. Ent., U. S. Dept. Agric., 1891.

EXHIBIT: Adult, work, and figures, with two enemies: *Chrysopa* sp. and *Adalia bipunctata* Linn.

THE COMMA BUTTERFLY.

Polygonia comma Harr.

(Formerly *Grapta.*)

For general account see Howard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 50–51, 1897.

EXHIBIT: Larva and adult.

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THE SEMICOLON BUTTERFLY.

Polygonia interrogationis Fab.

For general account see Howard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 47–49, 1897.

EXHIBIT: Larva and adult.

THE HOP GRUB.

Gortyna immanis Guen.

For general account and life history see Howard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 40–44, 1897.

EXHIBIT: Pupa, adult, and work.

THE HOP SNOUT-MOUTH.

Hypena humuli Harr.

For general account see Howard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 44–47, 1897.

EXHIBIT: Larva, pupa and adult.

THE VARIEGATED CUTWORM.

Peridroma saucia Hübn.

For general bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent,, U. S. Dept. Agric., pp. 46–64, 1901.

EXHIBIT: Larva and adult.

INSECTS INJURIOUS TO CLOVER.

For list of clover insects, and short articles on several important species see Bruner and Hunter, Rpt. St. Bd. Agr. Nebr., pp. 240–285, 1898.

INJURING THE ROOTS.

THE CLOVER ROOT-BORER.

Hylastinus trifolii Müll.

(Formerly *Hylastes.*)

For general articles see Riley, Rpt. U. S. Dept. Agr., f. 1878, pp. 248–250, 1879.

EXHIBIT: Adult, work, figure, and enemy, *Telephorus bilineatus* Say.

INJURING THE STEM.

THE CLOVER STEM-BORER.

Languria mozardi Latr.

For general account see Weed, Bul. Ohio Agr. Expt. Sta., 2d series, v. III, No. 8, p. 235, 1890.

EXHIBIT: Adult.

INJURING THE LEAVES.

THE CLOVER MITE.

Bryobia pratensis Garm.

For general article see Garman, 14th Rpt. St. Ent. Ill., p. 73, 1885; Brūner, Rpt. Nebr. St. Bd. Agric., f., 1898, pp. 280–284, 1899; Marlatt, Cir. 19, Div. Ent., U. S. Dept. Agric., 1897.

EXHIBIT: Figure.

CLOVER ALEYRODES.

Aleyrodes sp.

EXHIBIT: Adult and work.

THE WHEAT THRIPS.

Thrips tritici Fitch.

For citations to literature see Lintner, 11th Rpt. N. Y. St. Ent., pp. 247–250, 1896.

EXHIBIT: Figure.

THE CLOVER-LEAF WEEVIL.

Phytonomus punctatus Fabr.

For general account see Lintner, 1st. Rpt. St. Ent. N. Y., pp. 247–253, 1883; Sanderson, Insects injurious to staple crops, pp. 177–179, 1902.

EXHIBIT: Larva, cocoon, adult, work, figure, and enemy, *Collops 4-maculatus* Fab.

THE GRAPE-VINE COLASPIS.

Colaspis brunnea Fab.

For general article see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 13–14, 1903.

EXHIBIT: Adult.

THE 12-SPOTTED CUCUMBER BEETLE.

Diabrotica duodecimpunctata Oliv.

For general account and remedies see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 12–13, 1903; Quaintance, Bul. 26, n. s., Div. Ent., U. S. Dept. Agric., pp. 35–40, 1900.

EXHIBIT: Adult, figure, and parasite, *Celatoria diabroticæ*.

WESTERN CORN ROOT-WORM.

Diabrotica longicornis Say.

For general account see Forbes, 12th Rpt. St. Ent. Ill., pp. 10–31, figs. 1–5, 1883.

EXHIBIT: Adult.

THE IMBRICATED SNOUT-BEETLE.

Epicærus imbricatus Say.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 28–29, 1903; Bul. 19, n. s., pp. 62–67, 1899.

EXHIBIT: Adult.

THE GIBBOUS JUNE-BEETLE.

Lachnosterna gibbosa Burm.

For general account of white grubs see Forbes, 18th Rpt. St. Ent. Ill., pp. 109–144, 1894.

EXHIBIT: Adult.

THE FLAVESCENT CLOVER-WEEVIL.

Sitones flavescens Marsh.

For brief account see Osborn and Gossard, Bul. 14, Ia. Agric. Expt. Sta., pp. 177–178, 1891.

EXHIBIT: Adult.

GRAPHORHINUS VADOSUS Say.

For brief account see Webster, Amer. Nat., v. XVI, p. 746, 1882.

EXHIBIT: Adult.

THE ASH-GRAY BLISTER-BEETLE.

Macrobasis unicolor Kby.

For general account see Chittenden, Yearbook, U. S. Dept. Agric., 1898, pp. 249–250.

EXHIBIT: Adult.

FOUR-LINED PLANT-BUG.

Pœcilocapsus lineatus Fab.

For general accounts see Lintner, 1st. Rpt. St. Ent. N. Y., pp. 271–281, 1883; Slingerland, Bul. 58, Cornell Univ. Agr. Expt. Sta., pp. 207–239, 1893.

EXHIBIT: Adult.

THE TARNISHED PLANT-BUG.

Lygus pratensis Linn.

For general account see Riley, Rpt. U. S. Dept. Agric., f. 1884, pp. 312–315, 1885.

EXHIBIT: Adult.

THE CLOVER-LEAF MIDGE.

Cecidomyia trifolii Loew.

For brief articles see Bruner, Rpt. St. Bd. Agric. Nebr., 1898, pp. 250–251, 1899; Comstock, Rpt. U. S. Dept. Agric., 1879, pp. 197–199, 1880.

EXHIBIT: Cocoon, adult, and work.

THE RED-BANDED LEAF-ROLLER.

Eulia triferana Walk.

(Formerly *Lophoderus.*)

For brief accounts see Lugger, 4th Rpt. State Ent. Minn., p. 231, 1899; Forbes, 14th Rpt. St. Ent. Ill., pp. 20–21, 1885.

EXHIBIT: Pupa and adult.

THE RUSTY-BROWN TORTRIX.

Platynota flavedana Clem.

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 231–232, 1899.

Exhibit: Eggs, pupa, and adult.

THE SULPHUR-COLORED TORTRIX.

Epagoge sulfureana Clem.

(Formerly *Tortrix* and *Dichelia.*)

For brief account see Lugger, 4th Rpt. S. Ent. Minn., pp. 232–233, 1899. For bibliography see Forbes, 14th Rpt. St. Ent. Ill., pp. 17–20, 1885.

Exhibit: Pupa, adult, and work.

CŒLOSTATHMA DISCOPUNCTANA Clem.

(Formerly *Amphisa.*)

For brief notice see Comstock, Rpt. U. S. Dept. Agric., f. 1880, p. 258, 1881.

Exhibit: Pupa and adult.

THE FALL ARMY WORM.

Laphygma frugiperda S. & A.

For full life history and bibliography see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 13–45, 1901.

Exhibit: Adult.

ANAPHORA POPEANELLA Clem.

For general account see Riley and Howard, Insect Life, v. III, pp. 27–28, 1890.

Exhibit: Adult.

THE OBLIQUE-BANDED LEAF-ROLLER.

Archips rosaceana Harr.

(Formerly *Cacœcia.*)

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 226–227, 1899.

Exhibit: Pupa and adult.

THE GARDEN WEB-WORM.

Loxostege similalis Guen.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 39–40, 1903.

Exhibit: Adult and work.

ARISTOTELIA ROSEOSUFFUSELLA Clem.

(Formerly *Gelechia.*)

For brief reference to food plant see Murtfeldt, Bul. 23, Div. Ent., U. S. Dept. Agric., p. 54, 1891.

Exhibit: Pupa and adult.

ECTROPIS CREPUSCULARIA D. and S.

(Has been placed in genera *Cymatophora*, *Cleora*, and *Boarmia*.)

For brief accounts see Packard, 5th Rpt. U. S. Ent. Comm., p. 371, 1890; Lugger, 4th Rpt. St. Ent. Minn., p. 188, 1899.

EXHIBIT: Adult.

DRASTERIA ERECHTEA Cram.

For general account see Slingerland, Insect Life, vol. V, pp. 87–88, 1892.

EXHIBIT: Larva, cocoon, pupa, and adult.

THE CHICKWEED GEOMETER.

Hæmatopsis grataria Fabr.

For brief notice see Forbes, 14th Rpt. St. Ent. Ill., p. 74, 1885.

EXHIBIT: Adult.

IO MOTH.

Automeris io Fab.

For general account see Lugger, 4th Rpt. State Ent. Minn., pp. 126–129, fig. 130, and pl. 16, fig. 129, 1899.

EXHIBIT: Larva, cocoon, and adult.

CATOPYRRHA DISSIMILARIA Hübn.

(Formerly *Aspilates*.)

EXHIBIT: Adult.

THE GREEN CLOVER WORM.

Plathypena scabra Fab.

(Formerly *Hypena*.)

For accounts see Comstock, Rpt. U. S. Dept. Agric., 1879, p. 252, 1880; Chittenden, Bull. 30, n. s., Div. Ent., U. S. Dept. Agric., p. 44–50, 1901.

EXHIBIT: Larva, pupa, and adult.

THE SMALL WHITE BRISTLY CUTWORM.

Mamestra renigera Steph.

For short account see Forbes, 16th Rpt. St. Ent. Ill., pp. 95–96, 1890.

EXHIBIT: Larva, pupa, and adult.

THE CLOVER CUTWORM.

Mamestra trifolii Rott.

For account see Riley, Rpt. U. S. Dept. Agric. 1883, pp. 123–124, 1883.

EXHIBIT: Larva and adult.

ARMY WORM.

Heliophila unipuncta Harv.

(Formerly *Leucania*.)

For bibliography and life history see Lintner, 12th Rpt. N. Y. St. Ent., pp. 190–214, 1896.

EXHIBIT: Larva, pupa, and adult.

THE VARIEGATED CUTWORM.

Peridroma saucia Hübn.

For general bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 46–64, 1902.

EXHIBIT: Larva, adult, and figure.

THE COMMELINA OWLET MOTH.

Prodenia commelinæ S. & A.

For life history and general account see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 59–64, Pl. IV, fig. 1, 1901.

EXHIBIT: Larva, pupa, and adult.

THE DARK-SIDED CUTWORM.

Euxoa messoria Harr.

(Formerly *Carneades*.)

For general account see Riley, Rpt. U. S. Dept. Agric. f. 1884, pp. 290–291, 1885.

EXHIBIT: Larva and adult.

THE SMEARED DAGGER.

Apatela oblinita S. & A.

(Formerly *Acronycta*.)

For general account see Packard, 5th Rpt. U. S. Ent. Comm., pp. 567–568, 1890.

EXHIBIT: Larva, cocoon, and adult.

THE BRONZED CUTWORM.

Nephelodes minians Guen.

For life history and partial bibliography see Lintner, 1st Rpt. St. Ent. N. Y., pp. 99–110, 1882; Riley, Rpt. U. S. Dept. Agric. f. 1890, pp. 244–246, 1891.

EXHIBIT: Larva and adult.

THE CABBAGE LOOPER.

Autographa brassicæ Riley.

(Formerly *Plusia*.)

For general account and life history see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 60–69, 1902.

EXHIBIT: Larva, adult, and figure.

THE NAIS TIGER-MOTH.

Apantesis nais Dru.

For account see Beutenmuller, "Cat. Lepid. N. Y." Ann. Acad. N. Y., p. 206, 1890. (Formerly *Arctia*.)

EXHIBIT: Adult.

ZEBRA CATERPILLAR.

Mamestra picta Harr.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 42–43, 1903.

Exhibit: Larva and adult.

THE ISABELLA TIGER-MOTH.

Isia isabella S. & A.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 44–45, 1903. (Formerly *Pyrrharctia.*)

Exhibit: Larva and adult.

THE NORTHERN CLOUDY-WING.

Thorybes pylades Scud.

(Formerly *Eudamus.*)

Exhibit: Adult.

THE COMYNTAS BUTTERFLY.

Everes comyntas Godt.

(Formerly *Lycæna.*)

For brief account see Lintner, 4th Rpt. N. Y. St. Ent., p. 137, 1888.

Exhibit: Adult.

THE AMERICAN COPPER.

Heodes hypophlæas Bd.

(Formerly *Chrysophanus.*)

Exhibit: Adult.

LEMONIAS EDITHA Bd.

(Formerly *Melitæa.*)

Exhibit: Figure.

SOUTHERN DOG-FACE BUTTERFLY.

Zerene cæsonia Stall.

(Formerly *Colias.*)

For brief notice see Thomas, 10th Rpt. St. Ent. Ill., p. 78, 1881; Howard, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., p. 84, 1897.

Exhibit: Adult.

THE ORANGE SULPHUR.

Eurymus eurytheme Bd.

(Formerly *Colias.*)

For brief account see French, 7th Rpt. St. Ent. Ill., pp. 147–148, 1878.

Exhibit: Larva and adult.

THE YELLOW BUTTERFLY.

Eurymus philodice Godt.

(Formerly *Colias.*)

For brief account see Davis, Bul. 116, Mich. Agr. Expt. Sta., p. 61, 1894.

Exhibit: Adult.

THE CLOUDLESS SULPHUR.

Callidryas eubule Linn.

For brief account see French, 7th Rpt. St. Ent. Ill., pp. 147–148, 1878.

Exhibit: Larva, pupa, and adult.

THE BLACK-BORDERED YELLOW.

Eurema nicippe Cram.

(Formerly *Terias.*)

For brief account see French, 7th Rpt. St. Ent. Ill., p. 148, 1878.

Exhibit: Larva, pupa, and adult.

THE LITTLE SULPHUR.

Eurema euterpe Men.

(Formerly *Terias lisa.*)

For brief account see French, 7th Rpt. St. Ent. Ill., p. 148, 1878.

Exhibit: Adult.

OLETHREUTES INSTRUTANA Clem.

Exhibit: Adult.

THE CLOVER HAY WORM.

Hypsopygia costalis Fab.

(Formerly *Asopia* and *Pyralis.*)

For bibliography and general account see Lintner, 11th Rpt. St. Ent. N. Y., pp. 145–151, 1896.

Exhibit: Larva and adult.

THE MEAL SNOUT-MOTH.

Pyralis farinalis Linn.

For short account see Chittenden, Farmers' Bul. 45, U. S. Dept. Agric., pp. 10–11, 1897.

Exhibit: Larva, pupa, cocoon, and adult.

THE CLOVER PLANT-LOUSE.

Macrosiphum trifolii Perg.

(Attacks dandelion, oats, red clover, strawberry, wheat, &c.)

For general account see Pergande, Bul. 44, Div. Ent., U. S. Dept. Agric., pp. 21–23, 1904.

Exhibit: Figure.

THE TWO-STRIPED LOCUST.

Melanoplus bivittatus Say.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 363–368, pl. 24, fig. 5, 1897: Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 31–32, 1891.

Exhibit: Adult and figure.

THE LESSER LOCUST.

Melanoplus atlanis Riley.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 178–183, pl. 12, fig. 7, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 26–27, 1891.

EXHIBIT: Adult.

THE DIFFERENTIAL LOCUST.

Melanoplus differentialis Thos.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 349–354, pl. 23, figs. 3 and 4; Morgan, Bul. 30, n. s., Div. Ent., U. S. Dept. Agric., pp. 7–26, 1901.

EXHIBIT: Adult.

RED-LEGGED LOCUST.

Melanoplus femur-rubrum DeG.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 278–285; pl. 1, fig. h; pl. 19, figs. 1–3, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 27–28, 1891.

EXHIBIT: Adult.

THE ROCKY-MOUNTAIN LOCUST.

Melanoplus spretus Thos.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., vol. XX, pp. 184–190, pl. 12, fig. 8, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 9–26, 1891.

EXHIBIT: Adult.

INJURING THE FLOWERS AND SEEDS.

THE CLOVER-FLOWER MIDGE.

Dasyneura trifolii Lint.

(Formerly *Cecidomyia leguminicola* Lint.)

For general account see Riley, Rpt. U. S. Dept. Agric., 1878, pp. 250–252, 1879.

EXHIBIT: Cocoon, adult, and figure.

THE CLOVER-SEED CHALCIS-FLY.

Bruchophagus funebris How.

For brief accounts see Hopkins, Bul. 6, n. s., Div. Ent., U. S. Dept. Agric., p. 73, 1896, and Bul. 17, n. s., p. 45, 1898; Titus, Bul. 44, Div. Ent., U. S. Dept. Agric., pp. 77–80, 1904.

EXHIBIT: Adult and work.

THE CLOVER-SEED WORM.

Enarmonia interstinctana Clem.

(Formerly *Grapholitha.*)

For bibliography and general account see Lintner, 11th Rpt. St. Ent. N. Y., pp. 152–157, 1896.

EXHIBIT: Pupa, adult, and work.

INSECTS INJURIOUS TO SUGAR BEET.

For general articles see Forbes and Hart, Bul. 60, Ill. Agr. Expt. Sta., 136 pp., 1900; Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., 71 pp., 1903.

RED-LEGGED LOCUST.

Melanoplus femur-rubrum DeG.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 278–285, pl. 1, fig. h. pl. 19, figs. 1–4, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 27–28, 1891.

EXHIBIT: Adult and figure.

THE DIFFERENTIAL LOCUST.

Melanoplus differentialis Thos.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 349–354, pl. 23, figs. 3 and 4, 1897; also Morgan, Bul. 30, n. s., Div. Ent., U. S. Dept. Agric., pp. 7–26, 1901.

EXHIBIT: Adult and figure.

THE ROCKY-MOUNTAIN LOCUST.

Melanoplus spretus Thos.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 184–190, pl. 12, fig. 8, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 9–26, 1891.

EXHIBIT: Adult.

THE TWO STRIPED LOCUST.

Melanoplus bivittatus Say.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 363–368, pl. 24, fig. 5, 1897.

EXHIBIT: Adult, nymph, and figure.

THE LESSER LOCUST.

Melanoplus atlanis Riley.

For bibliography and general account see Scudder, Proc. U. S. N. M., v. XX, pp. 178–183, pl. 12, fig. 7, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 26–27, 1891.

EXHIBIT: Adult.

THE CAROLINA LOCUST.

Dissosteira carolina Linn.

For short account see Forbes and Hart, Bul. 60, Ill. Agr. Expt. Sta., pp. 479–480, 1900.

EXHIBIT: Nymph, adult, and parasite *Frontina frenchii* Will.

THE BEET LEAF-MINER.

Pegomya vicina Lint.

EXHIBIT: Adult and figure.

THE BEET CHLOROPS.

Chlorops assimilis Macq.

EXHIBIT: Puparium and adult.

THE COMMON ARMY WORM.

Heliophila unipuncta Harr.

(Formerly *Leucania.*)

For bibliography and life history see Lintner, 12th Rept. St. Ent. N. Y., pp. 190–214, 1896.

EXHIBIT: Larva and adult.

THE VARIEGATED CUTWORM.

Peridroma saucia Hübn.

For general bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 46–64, 1902.

EXHIBIT: Larva, adult, and figure.

THE PURSLANE CATERPILLAR.

Copidryas gloveri G. & R.

EXHIBIT: Larva and adult.

FALL ARMY WORM.

Laphygma frugiperda S. & A.

For full bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 40–45, 1901.

EXHIBIT: Larva, adult, and figure.

THE WHITE-LINED SPHINX.

Deilephila lineata Fabr.

EXHIBIT: Adult and figure.

THE BEET ARMY WORM.

Caradrina exigua Hübn.

For general articles see Gillette, 12th Rpt. Colo. Agr. Expt. Sta., p. 39, 1900; Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 37–46, 1902.

EXHIBIT: Adult and figure.

THE ZEBRA CATERPILLAR.

Mamestra picta Harr.

For bibliography and general life history see Felt, 14th Rpt. N. Y. St. Ent., pp. 201–207, 1898.

EXHIBIT: Larva and adult.

GARDEN WEB-WORM.

Loxostege similalis Guen.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 39–40, 1903.

EXHIBIT: Cocoon, adult, and figure.

THE SUGAR-BEET WEBWORM.

Loxostege sticticalis Linn.

For general account see Forbes, Bul. 60, Ill. Agr. Expt. Sta., p. 457–459, 1900.

EXHIBIT: Cocoon, pupa, adult, and figure.

THE ISABELLA TIGER MOTH.

Isia isabella S. & A.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 44–45, 1903. (Formerly *Pyrrharctia.*)

EXHIBIT: Larva, adult, and figure.

THE CLOVER CUTWORM.

Mamestra trifolii Rott.

For account see Riley, Rpt. U. S. Dept. Agric., 1883, pp. 123–124, 1883.

EXHIBIT: Larva, adult, and parasites *Ophion purgatum* Say. and *Euphorocera claripennis* Macq.

THE CABBAGE LOOPER.

Autographa brassicæ Riley.

For general account and life history see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 60–69, 1902.

EXHIBIT: Larva, adult, and parasite *Limneria tibiator* Cr

THE GARDEN FLEA-HOPPER.

Halticus uhleri Giard.

For general account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 57–62, 1899.

EXHIBIT: Adult and figure.

THE TARNISHED PLANT-BUG.

Lygus pratensis Linn.

For general account see Riley, Rpt. U. S. Dept. Agric. f. 1884, pp. 312–315, 1885.

EXHIBIT: Adult and figure.

THE SANDY GROUND BUG

Emblethis arenarius Linn.

EXHIBIT: Adult.

PURSLANE BUG.

Geocoris bullatus Say.

EXHIBIT: Adult.

THE MILITARY BUG.

Hadronema militaris Uhl.

EXHIBIT: Adult.

CLOUDED PIGWEED BUG.

Sphragisticus nebulosus Fall.

EXHIBIT: Adult.

THE BROWN LEAF-HOPPER.

Agallia sanguinolenta Prov.

EXHIBIT: Adult.

THE CHINCH-BUG.

Blissus leucopterus Say.

For general article and life history see Webster, Bul. 15, n. s., Div. Ent., U. S. Dept. Agric., 82 pp. 1898.

EXHIBIT: Eggs, nymph, adult, and figure.

THE FALSE CHINCH-BUG.

Nysius angustatus Uhl.

(Attacks many garden crops.)

EXHIBT: Adult and figure.

HOODED PLANT-BUG.

Euthoctha galeator Fab.

EXHIBIT: Eggs, nymph, and adult.

THE IMBRICATED SNOUT-BEETLE.

Epicærus imbricatus Say.

For detailed account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 62–67, 1899.

EXHIBIT: Adult and figure.

THE GIBBOUS JUNE BEETLE.

Lachnosterna gibbosa Burm.

For general account of white grub see Forbes, 18th Rpt. St. Ent. Ill., pp. 109–144, 1894.

EXHIBIT: Adult and figure.

THE 12-SPOTTED CUCUMBER BEETLE.

Diabrotica duodecempunctata Ol.

For general account and remedies see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 12–13, 1903; Quaintance, Bul. 26, n. s., pp. 35–40, 1900.

EXHIBIT: Adult, figures, and parasite *Celatoria diabroticæ.*

MONOCREPIDIUS VESPERTINUS Fab.

EXHIBIT: Adult and figure.

PENCILED SNOUT-BEETLE.

Centrinus penicellus Hbst.

EXHIBIT: Adult.

THE GREATER SUGAR-BEET LEAF-BEETLE.

Monoxia puncticollis Say.

EXHIBIT: Adult and figure.

THE LESSER SUGAR-BEET LEAF-BEETLE.

Monoxia consputa Lec.

EXHIBIT: Adult and figure.

THE GRAPE-VINE COLASPIS.

Colaspis brunnea Fab.

For general article see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 13–14, 1903.

EXHIBIT: Adult and figure.

WHITE GRUB; MAY BEETLE.

Lachnosterna fusca Fröh.

For account of white grubs injuring corn see Forbes, 18th Rpt. St. Ent. Ill., pp. 109–145, 1894.

EXHIBIT: Adult and figure.

THE CONVEX FLEA-BEETLE.

Psylliodes convexior Lec.

EXHIBIT: Adult.

THE PALE-STRIPED FLEA-BEETLE.

Systena blanda Mels.

For general articles see Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 22–29, 1900; Bul. 43, Div. Ent., p. 16, 1903.

EXHIBIT: Adult and figure.

THE SPINACH FLEA-BEETLE.

Disonycha xanthomelæna Dalm.

EXHIBIT: Adult, figure, and parasite *Hypostena barbata* Coq.

THE WAVY-NECKED FLEA-BEETLE.

Disonycha crenicollis Say.

EXHIBIT: Adult.

THE TRIANGULAR FLEA-BEETLE.

Disonycha triangularis Say.

EXHIBIT: Adult.

THE CUCUMBER FLEA-BEETLE.

Epitrix cucumeris Harr.

For short account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 89–90, 1899.

EXHIBIT: Adult and figure.

THE TOOTHED FLEA-BEETLE.

Chætocnema denticulata Illig.

EXHIBIT: Adult.

THE ASH-GRAY BLISTER-BEETLE.

Macrobasis unicolor Kby.

For short article see Chittenden, Yearbook, U. S. Dept. Agric., f. 1898, pp. 249–250, 1899.

EXHIBIT: Adult.

THE SPOTTED BLISTER-BEETLE.

Epicauta maculata Say.

For general account see Saunders, Bul. 57, S. Dak. Agric. Expt. Sta., p. 52, 1898; Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 24–25, 1903.

Exhibit: Adult and figure.

THE GRAY BLISTER-BEETLE.

Epicauta cinerea Först.

For brief account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 25, 1903.

Exhibit: Adult and figure.

BLACK BLISTER-BEETLE.

Epicauta pennsylvanica DeG.

For brief account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 25, 1903.

Exhibit: Adult and figure.

THE STRIPED BLISTER-BEETLE.

Epicauta vittata Fabr.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Agric., pp. 22–23, 1903.

Exhibit: Adult and figure.

NUTTALL'S BLISTER-BEETLE.

Cantharis nuttalli Say.

For short article see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 27, 1903.

Exhibit: Adult and figure.

INSECTS INJURIOUS TO TOBACCO.

For general articles see Howard, Farmers' Bul. 120, U. S. Dept. Agric., 1900; Yearbook, 1898, pp. 120–150.

NORTHERN TOBACCO WORM; TOMATO WORM.

Phlegethontius quinquemaculata Haw.

(Formerly *Protoparce celeus*.)

For general account see Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 10–14, 1900.

Exhibit: Larva, pupa, adult, and figure.

SOUTHERN TOBACCO WORM; HORNBLOWER.

Phlegethontius sexta Joh.

(Formerly *Protoparce carolina*.)

For general account see Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 10–14, 1900; Alwood, Bul. 17, n. s., Div. Ent., U. S. Dept. Agric., pp. 72–74, 1898.

Exhibit: Larva, pupa, adult, and figure.

TOBACCO BUDWORM.

Chloridea virescens Fab.

(Formerly *Heliothis rhexiæ* S. & A.)

For general account see Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 14–16, 1900.

Exhibit: Pupa, adult, and figure.

THE VARIEGATED CUTWORM.

Peridroma saucia Hübn.

For general bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 46–64, 1901.

Exhibit: Adult and figure.

THE BLACK CUTWORM.

Agrotis ypsilon Rott.

For general account see Riley, Rpt. U. S. Dept. Agric. f. 1884, pp. 294–295, 1885.

Exhibit: Adult and figure.

CORN-EAR WORM; COTTON BOLLWORM.

Heliothis obscura Fab.

(Feeds also on tobacco and tomato. For special case illustrating life history see under cotton and corn exhibits.)

For life history and general account see Quaintance, Farmers' Bul., 191, U. S. Dept. Agric., 1904.

Exhibit: Larva, pupa, adult, and figure.

GRANULATED CUTWORM.

Feltia annexa Tr.

For general account see Riley, Rpt. U. S. Dept. Agric. 1884, pp. 291–292, 1885. For description of stages see French, Canad. Ent., v. XIV, pp. 207–210, 1882.

Exhibit: Adult and figure.

THE PRETTY CUTWORM.

Mamestra legitima Grt.

For brief account see Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 24–25, fig. 20, 1900.

Exhibit: Larva, pupa, adult, and figure.

THE COMMELINA OWLET MOTH.

Prodenia commelinæ S. & A.

For life history and general account see Chittenden, Bul. 27, n. s., Div. Ent. U. S. Dept. Agric., pp. 59–64, pl. iv, fig. 1, 1901.

Exhibit: Larva, adult, and figure.

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THE CABBAGE LOOPER.

Autographa brassicæ Riley.

For general account and life history see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 60–69, 1902.

Exhibit: Adult and figure.

ŒCANTHUS QUADRIMACULATUS Beut.

For brief notice as *Œ. fasciatus* see Howard, Farmers' Bul. 120, U. S. Dept. Agric., p. 25, 1900.

Exhibit: Adult.

TOBACCO SUCKFLY.

Dicyphus minimus Uhl.

For general account see Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 16–18, 1900.

Exhibit: Adult and figure.

TOBACCO SPLITWORM; POTATO-TUBER WORM.

Phthorimæa operculella Zell.

(Works in leaves and stems. Formerly *Gelechia solanella.*)

For general accounts see Riley and Howard, Insect Life, v. IV, pp. 239–242, 1892; Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 19–22, 1900.

Exhibit: Adult and figure.

THE TOBACCO FLEA-BEETLE.

Epitrix parvula Fab.

For general account and life history see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 85–87, 1899; Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 5–10, 1900.

Exhibit: Adult and figure.

THE TOBACCO STALK WEEVIL.

Trichobaris mucorea Lec.

For general account see Chittenden, Bul. 38, Div. Ent., U. S. Dept. Agric., pp. 66–70, 1902.

Exhibit: Cocoon, adult, and work.

EUSCHISTUS VARIOLARIUS Beauv.

For brief accounts see Garman, Bul. 66, Ky. Agr. Exp. Sta., pp. 33–34, 1897; Howard, Farmer's Bul. 120, U. S. Dept. Agric., pp. 18–19, 1900.

Exhibit: Adult.

THE TOBACCO THRIPS.

Thrips tabaci Lind.

For brief account see Howard, Farmer's Bul. 120, U. S. Dept. Agric., pp. 24–25, 1900.

Exhibit: Figure.

THE CIGARETTE BEETLE.

Lasioderma testaceum Dufts.

(Formerly *L. serricorne.*)

For general account see Chittenden, Bul. 4, n. s., revis. ed., Div. Ent., U. S. Dept. Agric., pp. 126–127, 1897.

EXHIBIT: Adult, work, and figure.

THE DRUG-STORE BEETLE.

Sitodrepa panicea Linn.

For general account see Chittenden, Bul. 4, n. s., revis. ed., Div. Ent., U. S. Dept. Agric., pp. 124–126, 1897.

EXHIBIT: Adult and figure.

INSECTS INJURIOUS TO BEANS AND PEAS.

THE LIMA-BEAN STEM-BORER.

Monoptilota nubilella Hulst.

(Bores in stalks of Lima beans.)

For life history and general account see Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 9–17, 1900.

EXHIBIT: Larva, cocoon, adult, work, and figure.

SMALLER CORN STALK-BORER.

Elasmopalpus lignosellus Zell.

For life history and general account see Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 17–22, 1900.

EXHIBIT: Larva, adult, and figure.

NUTTALL'S BLISTER BEETLE.

Cantharis nuttalli Say.

For short article see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 27, 1903.

EXHIBIT: Adult and figure.

THE ASH-GRAY BLISTER BEETLE.

Macrobasis unicolor Kby.

For short article see Chittenden, Yearbook, U. S. Dept. Agric., f. 1898, pp. 249–250, 1899.

EXHIBIT: Adult.

THE BEAN LEAF-BEETLE.

Cerotomá trifurcata Först.

(Formerly *C. caminea* Fab.)

For general account see Chittenden, Yearbook, U. S. Dept. Agric., 1898, pp. 253–254.

EXHIBIT: Adult and figure.

THE BEAN LADYBIRD.

Epilachna corrupta Muls.

For general account see Gillette, Bul. 47, Colorado Agr. Expt. Sta., pp. 41–43, 1898; Chittenden, Yearbook, U. S. Dept. Agric., f. 1898, pp. 251–253, 1899.

Exhibit: Adult and figure.

THE 12-SPOTTED CUCUMBER BEETLE.

Diabrotica duodecempunctata Ol.

For general accounts and remedies see Quaintance, Bul. 26, n. s., Div. Ent., U. S. Dept. Agric., pp. 35–40, 1900; Chittenden, Bul. 43, pp. 12–13, 1903.

Exhibit: Adult.

THE IMBRICATED SNOUT-BEETLE.

Epicærus imbricatus Say.

For detailed account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 62–67, 1899; for general account, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 28–29, 1903.

Exhibit: Adult.

THE BANDED FLEA-BEETLE.

Systena tæniata Say.

For short account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 17, 1903.

Exhibit: Adult.

THE PALE-STRIPED FLEA-BEETLE.

Systena blanda Melsh.

For general article see Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 22–29, 1900; Bul. 43, p. 16, 1903.

Exhibit: Adult and figure.

THE LEAF-MINING LOCUST BEETLE.

Odontota dorsalis Thunb.

(Lives on locust, but attacks beans and other leguminous plants.)

For full life history, bibliography, and distribution see Chittenden, Bul. 38, Div. Ent., U. S. Dept. Agric., pp. 70-73, 1902.

Exhibit: Adult and figure.

THE DISTENDED MAY BEETLE.

Lachnosterna farcta Lec.

For short notices see Comstock, Rpt. U. S. Dept. Agric., 1879, pp. 247–248, Pl. V, fig. 5, 1880; Howard, Bul. 22, n. s., Div. Ent., U. S. Dept. Agric., p. 107, 1900.

Exhibit: Adult.

THE GARDEN FLEA-HOPPER.

Halticus uhleri Giard.

For general account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 57-62, 1899.

Exhibit: Adult and figure.

THE DINGY CUTWORM.

Feltia subgothica Haw.

For brief account see Chittenden, Yearbook, U. S. Dept. Agric., f. 1898, p. 257, 1899.

Exhibit: Adult.

SALT-MARSH CATERPILLAR.

Estigmene acræa Dru.

(Formerly *Leucarctia*.)

For short account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 43–44, fig. 41, 1903.

Exhibit: Adult.

YELLOW-BEAR CATERPILLAR.

Diacrisia virginica Fab.

(Formerly *Spilosoma*.)

For general account see Lugger, 4th Rpt. State Ent. Minn., pp. 79–81, fig. 78, 1899.

Exhibit: Adult and figure.

THE BEAN CUTWORM.

Ogdoconta cinereola Guen.

(Feeds on buds and leaves.)

For life history and general account see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 98–100, 1902.

Exhibit: Adult and figure.

THE ROLLER WORM.

Eudamus proteus Linn.

(Feeds on buds and leaves.)

For general article and life history see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 92–96, 1902.

Exhibit: Larva, chrysalis, adult, and figure.

COMMON BEAN WEEVIL.

Bruchus obtectus Say.

For general account and life history see Chittenden, Yearbook, U. S. Dept. Agric., 1898, pp. 239–242.

Exhibit: Adult, work, and figure.

THE PEA WEEVIL.

Bruchus pisorum Linn.

For general account and life history see Chittenden, Yearbook, U. S. Dept. Agric., 1898, pp. 234–239.

Exhibit: Adult, work, and figure.

THE COWPEA WEEVIL.

Bruchus chinensis Linn.

For general account and life history see Chittenden, Yearbook, U. S. Dept. Agric., 1898, pp. 242–245.

Exhibit: Adult and figure.

FOUR-SPOTTED BEAN-WEEVIL.

Bruchus quadrimaculatus Boh.

For general account and life history see Chittenden, Yearbook, U. S. Dept. Agric., 1898, pp. 245–247.

Exhibit: Adult and figure.

THE LENTIL WEEVIL.

Bruchus lentis Boh.

For brief account see Chittenden, Yearbook, U. S. Dept. Agric., 1898, p. 248.

Exhibit: Adult.

EUROPEAN BEAN-WEEVIL.

Bruchus rufimanus Boh.

For general account see Chittenden, Yearbook, U. S. Dept. Agric., 1898, pp. 247–248.

Exhibit: Adult.

THE MEXICAN BEAN-WEEVIL.

Spermophagus pectoralis Shp.

For brief account see Chittenden, Yearbook, U. S. Dept. Agric., 1898, p. 248.

Exhibit: Adult and figure.

THE GRAY HAIR-STREAK.

Uranotes melinus Hübn.

(Works in pods of peas and beans, and in silk corn. Formerly *Thecla*.)

For brief article see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 101–102, 1902.

Exhibit: Larva, pupa, adult, and figure.

BOLLWORM; CORN-EAR WORM.

Heliothis obscura Fab.

(See special case for full life history with illustrations.)

For life history and general account see Quaintance, Farmers' Bul. 191, U. S. Dept. Agric., 1904.

Exhibit: Larva, adult, work, and figure.

THE IMPORTED PEA-MOTH.

Semasia nigricana Steph.

For general accounts and life history see Fletcher, Rpt. Ent. and Bot., Can. Dept. Agric., 1900, p. 214, 1901; Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 96–98, 1902.

EXHIBIT: Adult and figure.

INSECTS INJURIOUS TO CRUCIFERS.

IMPORTED CABBAGE-WORM.

Pontia rapæ Sch.

(Formerly *Pieris.*)

For general articles see Riley, Rpt. U. S. Dept. Agric., f., 1883, pp. 108–113, 1884; Lugger, 1st Rpt. St. Ent. Minn., pp. 71–77, Pl. VI, 1896.

EXHIBIT: Larva, chrysalis, and adult.

THE LARGE CABBAGE BUTTERFLY.

Pontia monuste Linn.

For general article see Riley, Rpt. U. S. Dept. Agric., 1883, pp. 117–118, 1884. (Formerly *Pieris.*)

EXHIBIT: Adult.

THE POT-HERB BUTTERFLY.

Pontia oleracea Boisd.

(Formerly *Pieris.*)

For general account see Riley, Rpt. U. S. Dept. Agric., 1883, pp. 115–117, 1884.

EXHIBIT: Chrysalis and adult.

THE SOUTHERN CABBAGE WORM.

Pontia protodice Boisd.

For general articles see Riley, Rpt. U. S. Dept. Agric., f., 1883, pp. 114–115, 1884; Lugger, 1st Rpt. St. Ent. Minn., pp. 71–77, Pl. VII, 1896. (Formerly *Pieris.*)

EXHIBIT: Chrysalis and adult.

GARDEN WEB-WORM.

Loxostege similalis Guen.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 39–40, 1903.

EXHIBIT: Adult and figure.

GRANULATED CUTWORM.

Feltia annexa Tr.

For description of eggs and larval stage see French, Can. Ent., v. XIV, pp. 207-210, 1882. For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 291–292, 1885.

EXHIBIT: Larva, pupa, adult, and figure.

THE STRIPED CUTWORM.

Feltia subgothica Haw.

For general account see Slingerland, Bul. 104, Cornell Univ. Agric. Expt. Sta., pp. 274–279, 1895.

EXHIBIT: Larva, adult, and figure.

SHAGREENED CUTWORM.

Feltia malefida Guen.

(Larvæ destroy young plants.)

For short account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 292–293, 1885.

EXHIBIT: Adult and figure.

THE VARIEGATED CUTWORM.

Peridroma saucia Hübn.

For general bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 46–64, 1902.

EXHIBIT: Larva, adult, and figure.

THE BLACK CUTWORM.

Agrotis ypsilon Rott.

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 294–295, 1885.

EXHIBIT: Larva, adult, and figure.

THE SPECKLED CUTWORM.

Mamestra subjuncta G. & R.

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, p. 296, 1885.

EXHIBIT: Larva, pupa, and adult.

THE GLASSY CUTWORM.

Hadena devastatrix Brace.

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 296–297, 1885.

EXHIBIT: Adult.

THE W-MARKED CUTWORM.

Noctua clandestina Harr.

For general account see Slingerland, Bul. 104, Cornell Univ. Agr. Expt. Sta., pp. 571–574, 1895.

EXHIBIT: Larva and adult.

FALL ARMY WORM.

Laphygma frugiperda S. & A.

For full bibliography and life history see Chittenden, Bul. 29, n. s., Div. Ent., U. S. Dept. Agric., pp. 40–45, 1901.

EXHIBIT: Larva, adult, and figure.

THE CROSS-STRIPED CABBAGE WORM.

Evergestis rimosalis Guen.

(Formerly *Pionea.*)

For general article see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 54–59, 1902.

EXHIBIT: Larva, pupa, cocoon, adult, and figure.

THE SALT-MARSH CATERPILLAR.

Estigmene acræa Dru.

(Formerly *Leucarctia.*)

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 43–44, 1903.

EXHIBIT: Larva, cocoon, and adult.

THE CABBAGE LOOPER.

Autographa brassicæ Riley.

For general account and life history see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 60–69, 1902. (Formerly *Plusia.*)

EXHIBIT: Larva, cocoon, pupa, and adult.

THE DIAMOND-BACK MOTH.

Plutella maculipennis Curtis.

(Formerly *P. cruciferarum.*)

For general account see Lugger, 1st. Rpt. St. Ent. Minn., p. 79, Pl. VI, 1896.

EXHIBIT: Larva, cocoon, adult, and work.

HARLEQUIN CABBAGE-BUG.

Murgantia histrionica Hahn.

(Feeds on cruciferous plants of all kinds.)

For general accounts see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 309–312, 1885; Smith, Bul. 121, N. J. Agr. Expt. Sta., pp. 3–6, 1897.

EXHIBIT: Eggs, nymph, and adult.

THE TARNISHED PLANT-BUG.

Lygus pratensis Linn.

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 312–315, 1885.

EXHIBIT: Adult.

THE EGG-PLANT FLEA-BEETLE.

Epitrix fuscula Cr.

For general account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 87–89, 1899.

EXHIBIT: Adult and figure.

THE RED TURNIP BEETLE.

Entomoscelis adonidis Pallas.

For partial life history, short accounts, and bibliography see Fletcher, Rpt. Ent. and Bot.; Can. Dept. Agr., 1892, pp. 152–155, 1893; loc. cit., 1900, pp. 241, 1901; Chittenden, Bull. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 49–53, 1902.

EXHIBIT: Figure.

WESTERN CABBAGE FLEA-BEETLE.

Phyllotreta albionica Lec.

EXHIBIT: Adult.

HORSE-RADISH FLEA-BEETLE.

Phyllotreta armoraciæ Koch.

For general accounts see Chittenden, Ins. Life, v. VII, pp. 404–406, 1895; Bul. 9, n. s., Div. Ent., U. S. Dept. Agric., pp. 21–22, 1897.

EXHIBIT: Adult.

THE WESTERN FLEA-BEETLE.

Phyllotreta pusilla Horn.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 18–19, 1903.

EXHIBIT: Adult and figure.

THE STRIPED FLEA-BEETLE.

Phyllotreta vittata Fab.

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 301–304, 1885.

EXHIBIT: Adult.

WAVY-STRIPED FLEA-BEETLE.

Phyllotreta sinuata Steph.

(Formerly *P. zimmermani.*)

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 304–308, 1885.

EXHIBIT: Adult.

THE CAULIFLOWER PYRALID.

Pachyzancla bipunctalis Fab.

(Formerly *Botis repetitalis.*)

For description and brief accounts see Comstock, Rpt. U. S. Dept. Agric., 1880, p. 270, 1881; Riley, Rpt. U. S. Dept. Agric., 1883, pp. 128–129, 1884.

EXHIBIT: Pupa and adult.

THE ZEBRA CATERPILLAR.

Mamestra picta Harr.

For bibliography and general life-history see Felt, 14th Rpt. N. Y. St. Ent., pp. 201–207, 1898.

EXHIBIT: Larva, pupa and adult.

THE CABBAGE MAGGOT.

Pegomya brassicæ Bouché.

(Formerly *Anthomyia.*)

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 319–321, 1885.

Exhibit: Adult.

THE CABBAGE PLANT-LOUSE.

Aphis brassicæ Linn.

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 317–319, 1885.

Exhibit: Adult and work.

IMPORTED CABBAGE WEBWORM.

Hellula undalis Fab.

For general account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 51–57, 1899.

Exhibit: Larva, pupa, adult and figure.

THE CABBAGE CURCULIO.

Ceutorhynchus rapæ Gyll.

For general account and partial life history see Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 39–50, 1900.

Exhibit: Adult and figure.

THE IMPORTED CABBAGE LEAF-MINER.

Scaptomyza graminum Fall.

(Formerly *Oscinis brassicæ.*)

See Riley, Rpt. U. S. Dept. Agric., 1884, p. 322, 1885. For short account see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 76–77, 1902.

Exhibit: Adult.

INSECTS INJURIOUS TO POTATO.

THE RINGED MILLIPEDE.

Cambala annulata Say.

Exhibit: Figure.

THE SHORT-WINGED MOLE-CRICKET.

Scapteriscus abbreviatus Scudd.

For general account see Chittenden, Bul. 40, Div. Ent., U. S. Dept. Agric., pp. 117–118, 1903. For account of an allied species *S. didactylus* Latr., see Barrett, Bul. 2, Porto Rico Agric. Expt. Sta., 1902.

Exhibit: Adult.

POTATO-TUBER WORM; TOBACCO SPLIT-WORM.

Phthorimæa operculella Zell.

(Formerly *Lita* and *Gelechia solanella*. Works in stems and tubers.)

For general account see Riley and Howard, Insect Life, v. IV, pp. 239–242, 1892; Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 19–22, 1900.

Exhibit: Adult and figure.

THE POTATO-STALK WEEVIL.

Trichobaris trinotata Say.

For life history and general account see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 9–19, 1902.

Exhibit: Adult and work.

STALK-BORER.

Papaipema nitela Guen.

(Formerly *Gortyna* and *Hydræcia*. Bores in stems of various plants.)

For general account see Bird, Can. Ent., v. XXX, pp. 127–128, 1898.

Exhibit: Adult.

THE LITTLE GREEN TORTOISE-BEETLE.

Cassida pallidula Boh.

(Formerly *C. texana*.)

For short account see Riley, Amer. Nat., v. 17, p. 1070, October [17 Sept.], 1883.

Exhibit: Adult.

THE GOLDEN TORTOISE-BEETLE.

Coptocycla bicolor Fab.

(Formerly *C. aurichalcea*.)

For general account see Sanderson, Bul. 59, Md. Agr. Expt. Sta., pp. 139–140, 1899.

Exhibit: Adult.

COLORADO POTATO-BEETLE.

Leptinotarsa decemlineata Say.

(Formerly *Doryphora*.)

For general account of life history see Smith, Rpt. N. J. Agric. Expt. Sta., 1895, pp. 452–458, 1896.

Exhibit: Egg, larva, pupa, adult, figure, and the following enemies: *Brachinus kansanus* Lec., *Chilocorus bivulnerus* Mels., *Coccinella sanguinea* Linn., *Coccinella novemnotata* Hbst., *Harpalus caliginosus* Fab., *Hippodamia convergens* Güer., *Hippodamia glacialis* Fab., *Lebia atriventris* Say, *Lebia grandis* Htz., *Megilla maculata* DeG., *Nezara hilaris* Say, *Pasimachus elongatus* Lec., *Podisus spinosus* Dall., *Polistes pallipes* Lep., and *Tetracha virginica* Linn.

BOGUS POTATO-BEETLE.

Leptinotarsa juncta Germ.

(This species exhibited merely on account of similarity to preceding species. It feeds on wild Solanums.)

EXHIBIT: Adult.

THREE-LINED POTATO-BEETLE.

Lema trilineata Oliv.

For general account see Riley, 1st. Rpt. St. Ent. Mo., pp. 99–100, 1869.

EXHIBIT: Adult and figure.

THE WHITE BLISTER-BEETLE.

Macrobasis albida Say.

For brief account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 26, 1903.

EXHIBIT: Adult.

THE ASH-GRAY BLISTER-BEETLE.

Macrobasis unicolor Kby.

For general account see Chittenden, Yearbook, U. S. Dept. Agric., 1898, pp. 249–250.

EXHIBIT: Adult.

THE STRIPED BLISTER-BEETLE.

Epicauta vittata Fab.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 22–23, 1903.

EXHIBIT: Adult.

BLACK BLISTER-BEETLE.

Epicauta pennsylvanica DeG.

For brief account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 25, 1903.

EXHIBIT: Adult.

THE CROW BLISTER-BEETLE.

Epicauta corvina Lec.

For brief notice see Comstock, Rpt. U. S. Comm. Agric., 1879, p. 251, 1880.

EXHIBIT: Adult.

THE GRAY BLISTER-BEETLE.

Epicauta cinerea Först.

For brief account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., p. 24, 1903.

EXHIBIT: Adult.

THE SPOTTED BLISTER-BEETLE.

Epicauta maculata Say.

For general accounts see Saunders, Bul. 57, S. Dak. Agric. Expt. Sta., p. 52, 1898; Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 24–25, 1903.

EXHIBIT: Adult and figure.

THE EGG-PLANT FLEA-BEETLE.

Epitrix fuscula Cr.

For general account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 87–89, 1899.

EXHIBIT: Adult.

INSECTS INJURIOUS TO SWEET POTATOES.

For general bulletin see Sanderson, Sweet Potato Insects, Bul. 59, Md. Agric. Expt. Sta., 1900.

SWEET-POTATO ROOT-BORER.

Cylas formicarius Fab.

EXHIBIT: Adult and work.

SWEET-POTATO HAWK-MOTH.

Phlegethontius cingulata Fab.

EXHIBIT: Adult.

THE SWEET-POTATO PLUME-MOTH.

Pterophorus monodactylus Linn.

EXHIBIT: Adult.

LARGER SWEET-POTATO SAWFLY.

Schizocerus privatus Nort.

For general account see Marlatt, Insect Life, v. V, pp. 24–27, fig. 6, 1892.

EXHIBIT: Adult and figure.

SWEET-POTATO FLEA-BEETLE.

Chætocnema confinis Cr.

EXHIBIT: Adult.

THE CUCUMBER FLEA-BEETLE.

Epitrix cucumeris Harr.

For short account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 89–90, 1899.

EXHIBIT: Adult.

THE MOTTLED TORTOISE BEETLE.

Coptocycla signifera Hbst.

(Formerly *C. guttata.*)

EXHIBIT: Adult.

BLACK-LEGGED TORTOISE BEETLE.

Cassida nigripes Oliv.

EXHIBIT: Adult and work.

TWO-STRIPED TORTOISE BEETLE.

Cassida bivittata Say.

EXHIBIT: Adult.

THE GREEN TORTOISE BEETLE.

Physonota unipunctata Say.

For brief notices see Hamilton, Canad. Ent., v. XVI, pp. 134–135, 1884, and Caulfield, l. c., p. 227.

EXHIBIT: Adult.

THE ARGUS TORTOISE BEETLE.

Chelymorpha argus Licht.

(Also called *C. cassidea.*)

EXHIBIT: Adult.

INSECTS INJURIOUS TO TOMATO.

NORTHERN TOBACCO WORM; TOMATO WORM.

Phlegethontius quinquemaculata Haw.

(Formerly *Protoparce celeus.*)

For general account see Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 10–14, 1900.

EXHIBIT: Larva and adult.

SOUTHERN TOBACCO WORM; HORNBLOWER.

Phlegethontius sexta Joh.

(Formerly *Protoparce carolina.*)

For general accounts see Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 10–14, 1900; Alwood, Bul. 17, n. s., Div. Ent., U. S. Dept. Agric., pp. 72–74, 1898.

EXHIBIT: Larva and adult.

THE STALK BORER.

Papaipema nitela Guen.

For general accounts see Bird, Can. Ent., v. XXX, pp. 127–128, 1898; Lugger, 4th Rpt. State Ent. Minn., pp. 167–168, 1899.

EXHIBIT: Pupa and adult.

THE COMMELINA OWLET MOTH.

Prodenia commelinæ S. & A.

For life history and general account see Chittenden, Bull. 27, n. s., Div. Ent. U. S. Dept. Agric., pp. 59–64, Pl. IV, fig. 1, 1901.

EXHIBIT: Larva and adult.

CORN-EAR WORM; COTTON BOLLWORM.

Heliothis obscura Fab.

(Feeds also on tobacco and tomato; see under cotton and corn exhibits; formerly *H. armiger* Hübn.)

For life history and general account see Quaintance, Farmers' Bul. 191, 1904.

Exhibit: Larva and adult.

INSECTS INJURIOUS TO ASPARAGUS.

For general article on asparagus insects see Chittenden, Bul. 10, n. s., pp. 54–62, 1898.

THE ASPARAGUS MINER.

Agromyza simplex Loew.

For general account see Sirrine, Bul. 189, N. Y. Agric. Exp. Stat., pp. 277–282, 1900.

Exhibit: Adult.

LOPIDEA MEDIA Say.

Exhibit: Adult.

THE LESSER LOCUST.

Melanoplus atlanis Riley.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 178–183; pl. 12, fig. 7, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 26–27, 1891.

Exhibit: Adult.

THE TWO-STRIPED LOCUST.

Melanoplus bivittatus Say.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 363–368, pl. 24, fig. 5, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 31–32, 1891.

Exhibit: Adult and figure.

RED-LEGGED LOCUST.

Melanoplus femur-rubrum DeG.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 278–285, pl. 1, fig. h; pl. 19, figs. 1–4, 1897; Riley, Bul. 25, Div. Ent., U. S. Dept. Agric., pp. 27–28, 1891.

Exhibit: Adult.

MELANOPLUS PROPINQUUS Scudd.

For original description, see Scudder, Proc. U. S. N. M., v. XX; pp. 285–286, pl. 18, fig. 9, 1897.

Exhibit: Adult.

TWELVE-SPOTTED ASPARAGUS-BEETLE.

Crioceris duodecempunctata Linn.

For detailed account, see Chittenden, Yearbook, U. S. Dept. Agric., 1896, pp. 349–352, 1897.

Exhibit: Adult, figure, and adult of enemy, *Podisus spinosus* Dall.

THE ASPARAGUS BEETLE.

Crioceris asparagi Linn.

For detailed account, see Chittenden, Yearbook, U. S. Dept. Agric., 1896, pp. 341–349. For bibliography and general account, see Lintner, 11th Rpt. St. Ent. N. Y., pp. 177–188, 1896.

Exhibit: Larva, adult, figure, and enemy, *Stiretrus anchorago* Fab.

THE TWELVE-SPOTTED CUCUMBER BEETLE.

Diabrotica duodecempunctata Ol.

For general accounts and remedies, see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 12–13, 1903; Quaintance, Bul. 26, n. s., Div. Ent., U. S. Dept. Agric., pp. 35–40, 1900.

Exhibit: Adult and figure.

FALSE BUD-WORM; COTTON BOLLWORM.

Heliothis obscura Fab.

(Formerly *H. armiger* Hübn. For full life-history exhibit, see under cotton and corn.)

For life history and general account, see Quaintance, Farmers' Bul. 191, U. S. Dept. Agric., 1904.

Exhibit: Adult.

ZEBRA CATERPILLAR.

Mamestra picta Harr.

For general account see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 42–43, 1903.

Exhibit: Larva, adult, and figure.

THE PRETTY CUTWORM.

Mamestra legitima Grt.

For brief account see Howard, Farmers' Bul. 120, U. S. Dept. Agric., pp. 24–25, fig. 20, 1900.

Exhibit: Larva, adult, and figure.

CRANBERRY SPANWORM.

Cleora pampinaria Guen.

For general account see Smith, Farmers' Bul. 178, pp. 19–21, 1903.

Exhibit: Larva, pupa, and adult.

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THE RED-BANDED LEAF-ROLLER.

Eulia triferana Walk.

(Formerly *Lophoderus.*)

For brief account see Lugger, 4th Rpt. State Entom. Minn. p. 231, 1899.

EXHIBIT: Larva, pupa, and adult.

THE SULPHUR-COLORED TORTRIX.

Epagoge sulfureana Clem.

(Formerly *Dichelia.*)

For brief account see Lugger, 4th Rpt. State Entom. Minn., pp. 232–233, 1899.

EXHIBIT: Pupa and adult.

INSECTS INJURIOUS TO CUCURBITS.

SQUASH-VINE BORER.

Melittia satyriniformis Hübn.

(Formerly *Ægeria cucurbitæ.*)

For life history and general accounts see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 34–40, 1899; Cir. 38, Div. Ent., U. S. Dept. Agric., 1899.

EXHIBIT: Larva, pupa, cocoon, adult, and figure.

PICKLE WORM.

Diaphania nitidalis Cram.

(Formerly *Eudioptis* and *Margaronia.*)

For general accounts and bibliography see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 40–42, 1899; Lintner, 11th Rpt. N. Y. St. Ent., pp. 126–133, 1896.

EXHIBIT: Pupa, cocoon, adult, and figure.

MELON CATERPILLAR.

Diaphania hyalinata Linn.

For general accounts and bibliography see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 42–44, 1899; Lintner, 11th Rpt. N. Y. St. Ent., pp. 134–138, 1896. (Formerly *Eudioptis* and *Margaronia.*

EXHIBIT: Larva, pupa, adult, and figure.

NORTHERN LEAF-FOOTED PLANT-BUG.

Leptoglossus oppositus Say.

For life history and general account see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 18–25, 1902.

EXHIBIT: Nymph, adult, and figure.

STRIPED CUCUMBER BEETLE.

Diabrotica vittata Fab.

For general accounts see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 48–51, 1899; Cir. 31, Div. Ent., U. S. Dept. Agric., 1898.

EXHIBIT: Adult, work, and figure.

TWELVE-SPOTTED CUCUMBER BEETLE.

Diabrotica duodecempunctata Oliv.

For general articles see Chittenden, Bul. 43, Div. Ent., U. S. Dept. Agric., pp. 12–13, 1903; Quaintance, Bul. 26, n. s., pp. 35–40, 1900.

EXHIBIT: Adult.

THE CUCUMBER FLEA-BEETLE.

Epitrix cucumeris Harr.

For short account see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 89–90, 1899.

EXHIBIT: Adult and figure.

THE PUNCTURED FLEA-BEETLE.

Psylliodes punctulata Mels.

For brief account see Forbes and Hart, 21st Rpt. St. Ent. Ill., p. 124, 1900.

EXHIBIT: Adult.

THE HORNED SQUASH-BUG.

Anasa armigera Say.

For general accounts see Chittenden, Can. Ent., v. XXX, pp. 239–240, 1898; Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 28–34, 1899.

EXHIBIT: Eggs, nymph, adult, and figure.

THE COMMON SQUASH-BUG.

Anasa tristis De G.

For general accounts see Chittenden, Cir. 39, Div. Ent., U. S. Dept. Agric., 1899; Bul. 19, n. s., pp. 20–28, 1899.

EXHIBIT: Eggs, nymph, adult, and figure.

THE SQUASH LADYBIRD.

Epilachna borealis Fab.

For bibliography and life history see Chittenden, Bul. 19, n. s., Div. Ent., U. S. Dept. Agric., pp. 11–20, 1899.

EXHIBIT: Larva, pupa, adult, and work.

INSECTS INJURIOUS TO OTHER VEGETABLE PRODUCTS.

INJURING CARROT, CELERY, PARSLEY, AND PARSNIP.

THE CELERY LOOPER.

Plusia simplex Guen.

For general account see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 73–74, 1902.

EXHIBIT: Adult and figure.

THE GREENHOUSE LEAF-TYER.

Phlyctaenia ferrugalis Hübn.

For detailed account (under *P. rubigalis* Guen.) see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 7–26, 1901.

EXHIBIT: Larva, cocoon, adult, and figure.

THE CELERY CATERPILLAR.

Papilio polyxenes Fab.

(Formerly *P. asterias.*)

For general account see Davis, Bul. 102, Mich. Agric. Expt. Sta., pp. 21-24, 1893.

EXHIBIT: Larva, adult and chrysalis.

THE CARROT RUST-FLY.

Psila rosæ Fab.

For general article see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 26–32, 1902.

EXHIBIT: Adult and figure.

THE CARROT BEETLE.

Ligyrus gibbosus DeG.

For general account see Chittenden, Bul. 33, n. s., Div. Ent., U. S. Dept. Agric., pp. 32–37, 1902.

EXHIBIT: Adult and figure.

THE PARSNIP WEBWORM.

Depressaria heracliana DeG.

For general accounts see Riley, Insect Life, v. I, pp. 94–98, 1888; Southwick, Insect Life, v. V, pp. 106–109, 1892.

EXHIBIT: Larva, pupa, adult, work, and figure.

THE PARSNIP LEAF-MINER.

Acidia fratria Loew.

(Formerly *Trypeta.*)

For short account see Coquillett Insect Life, v. VII, pp. 383–384, 1895.

EXHIBIT: Adult and figure.

THE PARSLEY ROOT-BORER.

Listronotus latiusculus Boh.

For brief notice of injury see Chittenden, Yearbook, U. S. Dept. Agric., 1902, p. 731.

Exhibit: Adult.

THE LITTLE NEGRO BUG.

Corimelæna pulicaria Germ.

For general account see Davis, Bul. 102, Mich. Agric. Expt. Sta., pp. 13–18, 1893.

Exhibit: Nymph and adult.

DARK-SIDED CUTWORM.

Euxoa messoria.

(Formerly *Carneades.*)

For general account see Riley, Rpt. U. S. Dept. Agric., 1884, pp. 290–291, pl. 2, fig. 6, 1885.

Exhibit: Adult and figure.

INJURIOUS TO ONION.

THE WHEAT WIREWORM.

Agriotes mancus Say.

For general account see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 77–78, 1901.

Exhibit: Adult and figure.

TOBACCO THRIPS; ONION THRIPS.

Thrips tabaci Lind.

For short accounts as *T. striatus* see Gillette, Bul. 47, Colo. Agric. Expt. Sta., p. 44, 1898; Howard, Farmers' Bul. 120, U. S. Dept. Agric. pp. 24–25, 1900.

Exhibit: Figure.

THE CORN-STALK MAGGOT.

Chætopsis ænea Wied.

For general account see Howard, Insect Life, v. VII, pp. 352–354, 1895.

Exhibit: Pupa and adult.

THE ONION FLY.

Pegomya cepetorum Meade.

For general account as *Phorbia ceparum* see Slingerland, Bul. 78, Cornell Univ. Agric. Expt. Sta., pp. 495–496, 1894.

Exhibit: Adult.

INJURIOUS TO RHUBARB.

THE RHUBARB CURCULIO.

Lixus concavus Say.

For general account see Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 61–69, 1900.

EXHIBIT: Adult and figure.

THE CONVEX FLEA-BEETLE.

Psylliodes convexior Lec.

EXHIBIT: Adult.

INSECTS INJURIOUS TO ORNAMENTAL PLANTS.

For general article on insects affecting ornamental plants see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., 1901.

THE GREENHOUSE LEAF-TYER.

Phlyctænia ferrugalis Hübn.

EXHIBIT: Larva, cocoon, adult, and figure.

THE MORNING-GLORY LEAF-CUTTER.

Loxostege obliteralis Walk.

EXHIBIT: Larva, cocoon, adult, and figure.

THE ROSE BUD-WORM.

Olethreutes nimbatana Clem.

For bibliography and general account see Lintner, 5th Rpt. N. Y. St. Ent., pp. 213–215, 1889.

EXHIBIT: Pupa, adult, and figure.

THE VIOLET SAWFLY.

Emphytus canadensis Kby.

EXHIBIT: Adult and figure.

FULLER'S ROSE BEETLE.

Aramigus fulleri Horn.

EXHIBIT: Adult and figure.

THE FICKLE MIDGE.

Sciara inconstans Fitch.

EXHIBIT: Adult and figure.

THE VIOLET "GALL-FLY."

Diplosis violicola Coq.

EXHIBIT: Figure.

THE ROSE CURCULIO.

Rhynchites bicolor Fab.

EXHIBIT: Adult and figure.

CALIFORNIA FLOWER BEETLE.

Hoplia callipyge Lec.

EXHIBIT: Adult and figure.

THE ROSE LEAF-BEETLE.

Nodonota puncticollis Say.

For general account see Chittenden, Bull. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 60–61, 1897.

EXHIBIT: Adult.

THE AZALEA BARK SCALE.

Eriococcus azaleæ Comst.

For bibliography, food plants and distribution, see Fernald, Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 72, 1903.

EXHIBIT: Infested twig.

THE EUONYMUS SCALE.

Chionaspis euonymi Comst.

For bibliography, food-plants, and distribution see Fernald, Coccidae of World, Bul. 88, Mass. Agr. Col., pp. 216, 1903.

EXHIBIT: Infested twig.

THE ROSE COTTONY SCALE.

Palæococcus rosæ R. & H.

For bibliography, distribution, and food plants, see Fernald, Coccidae of World, Bul. 88 Mass. Agr. Coll., p. 21, 1903. For general account see Riley and Howard, Insect Life, v. III, pp. 93–97, 1890.

EXHIBIT: Infested twig.

THE BLACK OR BROWN APHIS OF VIOLETS.

Rhopalosiphum violæ Perg.

For original description with short account of injury to violets, see Pergande, Can. Ent. v. XXXII, pp. 29–30, 1900.

EXHIBIT: Figure.

THE TWO-SPOTTED RED SPIDER.

Tetranychus bimaculatus Harv.

For description and distribution see Banks, Tech. Ser., 8, Div. Ent. U. S. Dept. Agric., pp. 73–74, 1900.

EXHIBIT: Figure.

THE WHITE ANT.

Leucotermes flavipes Koll.

For general account see Marlatt, Cir. 50, Div. Ent., U. S. Dept. Agric., 1902. (Formerly *Termes.*)

EXHIBIT: Adult and figure.

INSECTS INJURIOUS TO CRANBERRY.

For treatises on cranberry insects see Smith, Farmers' Bul. 178, U. S. Dept. Agric., 1903; Bul. 90 N. J. Agr. Exp. Sta., 1892; Saunders, Insects Injurious to Fruits, 2d ed., pp. 369–376, 1900.

INJURING THE LEAVES.

LEATHER-COLORED LOCUST.

Schistocerca alutacea Harr.

EXHIBIT: Adult. (Formerly *Acridium.*)

THE TWO-STRIPED LOCUST.

Melanoplus bivittatus Say.

For bibliography and general accounts see Scudder, Proc. U. S. N. M., v. XX, pp. 363–368, fig. 5, 1897; Riley, Bul. 25, Div. Ent. U. S. Dept. Agric., pp. 31–32, 1891.

EXHIBIT: Adult.

THE ANGULAR-WINGED KATYDID.

Microcentrum retinerve Burm.

EXHIBIT: Adult, eggs and parasitized eggs.

THE CRANBERRY LOOPER.

Xanthotype crocataria Fab.

(Formerly *Angerona.*)

For general account see Lugger, 4th Rpt. State Entom. Minn., pp. 178–179, 1899.

EXHIBIT: Adult.

CHAIN-SPOTTED GEOMETER.

Cingilia catenaria Dru.

(Formerly *Caterva.*)

For general account see Lugger, 4th Rpt. St. Ent. Minn., pp. 186–187, 1899; Packard, 5th Rpt. U. S. Ent. Comm., pp. 783–784, 1890.

EXHIBIT: Larva, pupa, and adult.

CRANBERRY SPANWORM.

Cleora pampinaria Guen.

(Formerly *Boarmia.*)

For general account see Smith, Farmers' Bul. 178, U. S. Dept. Agric., pp. 19–21, 1903.

EXHIBIT: Larva, pupa, and adult.

THE YELLOWHEAD CRANBERRY WORM.

Acleris minuta Rob.

(Formerly *Teras.*)

For general account see Smith, Farmers' Bul. 178, U. S. Dept. Agric., pp. 12–17, 1903.

EXHIBIT: Adult and figure.

THE VINE-WORM; THE FIRE-WORM.

Eudemis vacciniana Pack.

For general account see Smith, Farmers' Bul. 178, U. S. Dept. Agric., pp. 9–12, 1903.

EXHIBIT: Larva, adult, work, and figure.

INJURING THE STEMS.

THE CRANBERRY GIRDLER.

Crambus hortuellus Hübn.

For general account see Smith, Farmers' Bul. 178, U. S. Dept. Agric., pp. 21–24, 1903.

EXHIBIT: Adult and figure.

CRANBERRY SCALE; PUTNAM'S SCALE.

Aspidiotus ancylus Putn.

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 252–253, 1903.

EXHIBIT: Infested twig from fruit tree.

INSECTS INJURING THE FRUIT.

THE CRANBERRY FRUIT WORM.

Mineola vaccinii Riley.

For general account see Smith, Farmers' Bul. 178, U. S. Dept. Agric., pp. 24–26, 1903.

EXHIBIT: Pupa, cocoon, adult, and figure.

THE CRANBERRY KATYDID.

Scudderia texensis Sauss.

For general account see Smith, Farmers' Bul. 178, U. S. Dept. Agric., pp. 26–29, 1903.

EXHIBIT: Adult and figure.

INSECTS INJURIOUS TO STRAWBERRY.

For general articles treating of these insects see Forbes, 13th Rpt. Ill. St. Ent., pp. 60–180, 1884; Saunders, Insects Injurious to Fruits, 2d ed., pp. 321–335, 1900.

INJURING THE ROOTS AND CROWN.

THE STRAWBERRY CROWN-GIRDLER.

Otiorhynchus ovatus Linn.

For brief bibliography and account see Lintner, 10th Rpt. St. Ent. N. Y., pp. 416–419, 1895.

EXHIBIT: Adult.

THE STRAWBERRY CROWN-BORER.

Tyloderma fragariæ Riley.

For detailed accounts see Forbes, 12th Rpt. Ill. St. Ent., pp. 64–75, 1883; 13th Rpt., p. 142, 1884.

EXHIBIT: Adult, work, and figure.

STRAWBERRY CROWN MOTH.

Ægeria rutilans Hy. Edw.

(Formerly *Sesia.*)

For general account see Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 85–90, 1900.

EXHIBIT: Adult, pupa, and work.

THE SPOTTED STRAWBERRY LEAF-BEETLE.

Typophorus canellus Fab.

For general account see Forbes, 13th Rpt. St. Ent. Ill., pp. 159–163, 1884.

EXHIBIT: Adult.

INJURING THE ROOTS.

WHITE GRUB; JUNE BEETLE.

Lachnosterna arcuata Sm.

For general account see Chittenden, Bul. 27, n. s., Div. Ent., U. S. Dept. Agric., pp. 74–76, 1901.

EXHIBIT: Adult and figure.

THE STRAWBERRY ROOT-BORER.

Graphops nebulosus Lec.

For brief notice see Garman, Bul. 31, Ky. Agric. Exp. Sta., p. 23, 1890.

EXHIBIT: Adult.

INJURING THE LEAVES.

THE STRAWBERRY FALSE-WORM.

Harpiphorus maculatus Nort.

For general account see Harrington, Insect Life, v. II, pp. 227–228, 1890.

EXHIBIT: Larva, pupa, adult, work, and figure.

THE STRAWBERRY LEAF-CHAFER.

Diplotaxis frondicola Say.

For brief account see Kridelbaugh, Ann. Rpt. Ia. St. Hort. Soc., 1871, p. 161, 1872.

EXHIBIT: Adult and work.

THE STRAWBERRY FLEA-BEETLE.

Haltica ignita Illig.

For general account see Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 70–78, 1900.

EXHIBIT: Adult.

THE ROSE LEAF-BEETLE.

Nodonota puncticollis Say.

For general account see Chittenden, Bul. 7, n. s., Div. Ent., U. S. Dept. Agric., pp. 60–61, 1897.

EXHIBIT: Adult.

THE DUSKY PLANT-BUG.

Calocoris rapidus Say.

For short account see Lugger, 1st Rpt. St. Ent. Minn., p. 65, 1900.

EXHIBIT: Adult.

RASPBERRY LEAF-ROLLER.

Exartema permundana Clem.

For general account see Packard, 5th Rpt. U. S. Ent. Comm., pp. 312–313, 1890.

EXHIBIT: Adult.

THE STRAWBERRY LEAF-ROLLER.

Ancylis comptana Fröhl.

(Formerly *Phoxopteris.*)

For general account see Smith, Bul. 149, N. J. Agric. Expt. Sta., pp. 3–12, 1901.

EXHIBIT: Larva, pupa, adult, and figure.

THE SMEARED DAGGER.

Apatela oblinita S. & A.

For general account see Packard, 5th Rpt. U. S. Ent. Comm., pp. 567–568, 1890. (Formerly *Acronycta.*)

EXHIBIT: Larva, adult, and figure.

INJURING THE BUDS AND STEMS.

THE STRAWBERRY WEEVIL.

Anthonomus signatus Say.

(Lays eggs in buds and severs stems.)

For general account see Chittenden, Cir. 21, Div. Ent., U. S. Dept. Agric., 1897.

EXHIBIT: Adult, work, figure, and the parasites *Calyptus tibiator* Cr. and *Catolaccus incertus* Ashm.

INSECTS INJURIOUS TO BLACKBERRY AND RASPBERRY.

For general articles see Webster, Bul. 45, Ohio Agric. Expt. Sta., pp. 151–217, 1893; Saunders, Insects Injurious to Fruits, 2d edit., pp. 303–320, 1900.

INJURING THE ROOTS.

THE RASPBERRY ROOT-BORER.

Bembecia marginata Harr.

For general account see Smith, Spec. Bul. N, N. J. Agric. Expt. Sta., pp. 9–12, 1891.

EXHIBIT: Larva and adult.

INJURING THE STEMS.

BLACKBERRY GALL-MAKER.

Diastrophus turgidus Bass.

(Formerly *D. nebulosus* O. S.)

For brief article see Saunders, Insects Injurious to Fruits, 2d ed., pp. 318–319, 1900.

EXHIBIT: Adult and figure.

RASPBERRY CANE-BORER.

Oberea bimaculata Oliv.

For bibliography and general account see Lintner, 5th Rpt. N. Y. St. Ent., pp. 231–233, 1889.

EXHIBIT: Adult and work.

THE SNOWY TREE-CRICKET.

Œcanthus niveus DeG.

For general account see Lugger; 3d Rpt. St. Ent. Minn., pp. 269–271, 1898.

EXHIBIT: Adult, work, and figure.

RED-NECKED CANE-BORER.

Agrilus ruficollis Fab.

For general account see Smith, Spec. Bul. N, N. J. Agric. Expt. Sta., pp. 4–8, 1891.

EXHIBIT: Adult, work, and figure.

INJURING THE LEAVES.

THE RASPBERRY SAWFLY.

Monophadnoides rubi Harris.

For bibliography and general account see Lowe, Bul. 150, N. Y. Agric. Expt. Sta., pp. 249–262, pls. IV–VI, 1898.

EXHIBIT: Larva, adult, and work.

RASPBERRY LEAF-ROLLER.

Exartema permundana Clem.

For general account see Packard, 5th Rpt. U. S. Ent. Comm., pp. 312–313, 1890.

EXHIBIT: Adult.

THE FALL WEBWORM.

Hyphantria cunea Dru.

(Feeds on leaves of various trees, shrubs, and vines.)

For general account see Howard, Farmers' Bul. 99, U. S. Dept. Agric., pp. 20–25, 1899.

EXHIBIT: Adult and figure.

THE SMEARED DAGGER.

Apatela oblinita S. & A.

For general account see Packard, 5th Rpt. U. S. Ent. Comm., pp. 567–568, 1890. (Formerly *Acronycta*.)

EXHIBIT: Larva and adult.

STRAWBERRY LEAF-ROLLER.

Ancylis comptana Fröhl.

(Formerly *Phoxopteris.*)

For general account see Smith, Bul. 149, N. J. Agric. Expt. Sta., pp. 3–12, 1901.

Exhibit: Pupa and adult.

THE FOUR-MARKED LEAF-BEETLE.

Cryptocephalus quadrimaculatus Say.

Exhibit: Adult.

THE HOODED PLANT-BUG.

Euthoctha galeator Fab.

For brief notices see Riley and Howard, Insect Life, v. I, p. 54, 1888; p. 366, 1889.

Exhibit: Eggs, nymph, and adult.

INJURING THE FRUIT.

RASPBERRY SPAN-WORM.

Synchlora ærata Fab.

(Formerly *S. glaucaria.*)

For bibliography and general account see Lintner, 8th Rpt. St. Ent. N. Y., pp. 129–133, 1893.

Exhibit: Pupa, adult, and figure.

THE LITTLE NEGRO BUG.

Corimelæna pulicaria Germ.

For general account see Lintner, 8th Rpt. St. Ent. N. Y., pp. 213–214, 1893.

Exhibit: Adult and figure.

INSECTS INJURIOUS TO CURRANT AND GOOSEBERRY.

For general article on insects affecting currant and gooseberry see Piper and Doane, Bul. 36, Washington Agr. Expt. Sta., 1898.

INJURING THE STEMS.

THE TERRAPIN SCALE.

Eulecanium nigrofasciatum Perg.

(Food plants: Apple, birch, linden, maple, peach, plum, sycamore; formerly *Lecanium.*)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., p. 191, 1903; Pergande, Bul. 18, n. s., Div. Ent., U. S. Dept. Agr., pp. 26–29, figs. 1898.

Exhibit: Infested twig.

THE NATIVE CURRANT STEM-BORER.

Psenocerus supernotatus Say.

For general account see Lugger, 5th Rpt. State Entom. of Minnesota, pp. 121–122, 1899.

Exhibit: Adult and work.

CURRANT CLEARWING MOTH; IMPORTED CURRANT-BORER.

Sesia tipuliformis Clerck.

For general account see Lugger, 4th Rpt. State Entom. Minn., pp. 60–64, 1899.

Exhibit: Adult and work.

PUTNAM'S SCALE; CRANBERRY SCALE.

Aspidiotus ancylus Putn.

(Food-plants: Apple, apricot, box-elder, cottonwood, cranberry, elm, hemlock, maple, oak, peach, pear, plum, etc.)

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 252–253, 1903.

Exhibit: Infested twig.

THE SAN JOSE SCALE.

Aspidiotus perniciosus Comst.

(Food plants: Almond, apple, apricot, birch, black walnut, black currant, catalpa, chestnut, crab apple, crab grass, cherry, grape, hickory, oak, peach, pear, persimmon, plum, poplar, prune, Rocky Mountain cherry, rose, silver maple, willow, and many other plants. See under "More important scale insects.")

For bibliography and food plants see Fernald, Cat. Coccidæ of World, Bul. 88, Mass. Agr. Coll., pp. 271–275, 1903; Howard and Marlatt, Bul. 3, n. s., Div. Ent., U. S. Dept. Agr., 1896. 80 pp.

Exhibit: Infested twig.

THE BLACK GOOSEBERRY BORER.

Xylocrius agassizii Lec.

For general accounts see Fletcher, Rpt. of Ent. and Bot. for 1898, Can. Dept. Agric., pp. 207–210, 1899; Chittenden, Bul. 23, n. s., Div. Ent., U. S. Dept. Agric., pp. 90–92, 1900.

Exhibit: Adult and figure.

INJURING THE LEAVES.

GOOSEBERRY SPANWORM.

Cymatophora ribearia Fitch.

For short account see Lugger, 4th Rpt. State Ent. Minn., pp. 184–186, 1899. (Formerly *Eufitchia.*)

Exhibit: Eggs, larva, pupa, adult, and figure.

IMPORTED CURRANT WORM.

Pteronus ribesii Scop.

(Formerly *Nematus ventricosus.*)

For bibliography and technical description see Marlatt, Tech. Series 3, Div. Entom., U. S. Dept. Agric., pp. 61–63, 1896.

EXHIBIT: Adult, figure, and an enemy, *Podisus placidus* Uhl.

THE NATIVE CURRANT WORM.

Pristiphora grossulariæ Walsh.

For bibliography see *Gymnonychus appendiculatus* Htg., Marlatt, Tech. Series 3, Div. Entom., U. S. Dept. Agric., p. 124, 1896.

EXHIBIT: Adult and figure.

THE CRANBERRY LOOPER.

Xanthotype crocataria Fab.

For general account see Lugger, 4th Rpt. State Entom. Minn., pp. 178–179, 1899.

EXHIBIT: Larva and adult.

POLYGONIA PROGNE Cram.

(Formerly *Grapta.*)

For general account see Packard, 5th Rpt. U. S. Entom. Comm., pp. 241, 1890.

EXHIBIT: Larva, chrysalis, and adult.

INJURING THE FRUIT.

GOOSEBERRY FRUIT-WORM.

Zophodia grossulariæ Pack.

For general account see Lugger, 4th Rpt. State Entom. Minn., pp. 214–216, 1899.

EXHIBIT: Pupa and adult.

INSECTS INJURIOUS TO STORED PRODUCTS.

(See also *Calandra oryza,* under Rice.)

THE WOLF MOTH.

Tinea granella Linn.

For general account see Chittenden, Bul. 8, n. s., Div. Ent., U. S. Dept. Agric., pp. 31–34, 1897.

EXHIBIT: Pupa and adult.

MEDITERRANEAN FLOUR MOTH.

Ephestia kuehniella Zell.

For general account see Chittenden, Farmers' Bul. 45, U. S. Dept. Agric., pp. 8–9, 1897.

EXHIBIT: Larva, pupa, cocoon, adult, and figure.

DRIED-CURRANT MOTH.

Ephestia cautella Wlk.

For short account (under *E. cahiritella*) see Chittenden, Bul. 8, n. s., Div. Ent., U. S. Dept. Agric., pp. 7–9, 1897.

EXHIBIT: Larva, adult, and figure.

THE MEAL SNOUT-MOTH.

Pyralis farinalis Linn.

(Formerly *Asopia.*)

For short account see Chittenden, Farmers' Bul. 45, pp. 10–11, 1897.

EXHIBIT: Larva, pupa, cocoon, and adult.

THE INDIAN-MEAL MOTH.

Plodia interpunctella Hübn.

(Formerly *Ephestia.*)

For general account see Chittenden, Farmers' Bul. 45, U. S. Dept. Agric., pp. 9–10, 1897.

EXHIBIT: Larva, pupa, adult, work, and figure.

ANGOUMOIS GRAIN-MOTH.

Sitotroga cerealella Oliv.

(Formerly *Gelechia.*)

For general account see Chittenden, Farmers' Bul. 45, U. S. Dept. Agric., pp. 6–7, 1897.

EXHIBIT: Cocoon, adult, work, and figure.

THE FOREIGN GRAIN-BEETLE.

Cathartus advena Waltl.

For short account see Chittenden, Farmers' Bul. 45, U. S. Dept. Agric., pp. 17–18, 1897.

EXHIBIT: Adult, work, and figure.

RED OR SQUARE-NECKED GRAIN-BEETLE.

Cathartus gemellatus Duv.

For short account see Chittenden, Farmers' Bul. 45, U. S. Dept. Agric., p. 17, 1897.

EXHIBIT: Adult and figure.

THE SAW-TOOTHED GRAIN-BETTLE.

Silvanus surinamensis Linn.

For short account see Chittenden, Farmers' Bul. 45, U. S. Dept. Agric., pp. 16–17, 1897.

EXHIBIT: Adult and figure.

THE MERCHANT GRAIN-BEETLE.

Silvanus mercator Fauv.

For short account see Chittenden, Bul. 8, n. s., Div. Ent., U. S. Dept. Agric., p. 12, 1897.

EXHIBIT: Adult.

PHARAXONOTHA KIRSCHII Reitt.

For short notice see Chittenden, Insect Life, v. VII, p. 327, 1895.

EXHIBIT: Adult.

THE FLAT GRAIN-BEETLE.

Læmophlœus pusillus Sch.

For short account see Chittenden, Bul. 4, n. s., rev. ed., Div. Ent., U. S. Dept. Agric., p. 129, 1902.

EXHIBIT: Adult.

TYPHŒA FUMATA Linn.

EXHIBIT: Adult and work.

THE BLACK CARPET BEETLE.

Attagenus piceus Oliv.

For general account see Chittenden, Bul. 8, n. s., Div. Ent., U. S. Dept. Agric., pp. 15–19, 1897.

EXHIBIT: Adult.

TROGODERMA TARSALE Mels.

For general account see Chittenden, Bul. 8, n. s., Div. Ent., U. S. Dept. Agric., pp. 19–21, 1897.

EXHIBIT: Adult.

THE CABINET BEETLE.

Anthrenus verbasci Linn.

(Formerly *A. varius.*)

For short account see Chittenden, Bul. 8, n. s., Div. Ent., U. S. Dept. Agric., pp. 22–23, 1897.

EXHIBIT: Adult and work.

THE MEAL SAP-BEETLE.

Carpophilus dimidiatus Fab.

EXHIBIT: Adult.

THE CORN SAP-BEETLE.

Carpophilus pallipennis Say.

EXHIBIT: Adult.

THE CADELLE.

Tenebroides mauritanicus Linn.

(Formerly *Trogosita.*)

For general account see Chittenden, Farmers' Bul. 45, U. S. Dept. Agric., pp. 18–19, 1897.

EXHIBIT: Larva, adult, work, and figure.

THE DARK MEAL-WORM.

Tenebrio obscurum Fab.

For short account see Chittenden, Farmers' Bul. 45, rev. ed., U. S. Dept. Agric., p. 15, 1897.

EXHIBIT: Larva, pupa, adult, and figure.

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THE YELLOW MEAL-WORM.

Tenebrio molitor Linn.

For general account see Chittenden, Farmers' Bul. 45, rev. ed., U. S. Dept. Agric., pp. 14–15, 1897.

Exhibit: Larva, pupa, adult, and figure.

THE WHITE-MARKED SPIDER-BEETLE.

Ptinus fur Linn.

For general account see Chittenden, Bul. 4, n. s., rev. ed., Div. Ent., U. S. Dept. Agric., pp. 127–128, 1902.

Exhibit: Adult.

THE BROWN SPIDER-BEETLE.

Ptinus brunneus Dufts.

For short account see Chittenden, Bul. 4, n. s., rev. ed., Div. Ent., U. S. Dept. Agric., p. 128, 1902.

Exhibit: Adult.

THE DRUG-STORE BEETLE.

Sitodrepa panicea Linn.

(Listed as *Anobium* in foreign catalogues.)

For general account see Chittenden, Bul. 4, n. s., rev. ed., Div. Ent., U. S. Dept. Agric., pp. 124–126, 1897.

Exhibit: Adult, work and figure.

THE CIGARETTE BEETLE.

Lasioderma testaceum Dufts.

(Formerly *L. serricorne.*)

For general account see Chittenden, Bul. 4, n. s., rev. ed., Div. Ent., U. S. Dept. Agric., pp. 126–127, 1897.

Exhibit: Adult and figure.

THE LARGER GRAIN-BORER.

Dinoderus truncatus Horn.

For short account see Chittenden, Insect Life, v. VII, p. 327, 1895.

Exhibit: Adult.

THE RUST-RED FLOUR-BEETLE.

Tribolium ferrugineum Fab.

For general account see Chittenden, Farmers' Bul. 45, rev. ed., U. S. Dept. Agric., pp. 12–13, 1897.

Exhibit: Adult.

THE CONFUSED FLOUR-BEETLE.

Tribolium confusum Duv.

For general account see Chittenden, Bul. 4, n. s., rev. ed., Div. Ent. U. S. Dept. Agric., pp. 113–115, 1902.

Exhibit: Adult and figure.

THE SLENDER-HORNED FLOUR-BEETLE.

Echocerus maxillosus Fab.

For short account see Chittenden, Farmers' Bul. 45, rev. ed., U. S. Dept. Agric., p. 13, 1897.

EXHIBIT: Adult and figure.

THE BROAD-HORNED FLOUR-BEETLE.

Echocerus cornutus Fab.

For short account see Chittenden, Farmers' Bul. 45, rev. ed., U. S. Dept. Agric., p. 13, 1897.

EXHIBIT: Adult and figure.

THE SMALL-EYED FLOUR-BEETLE.

Palorus ratzeburgi Wissm.

For short account see Chittenden, Farmers' Bul. 45., rev. ed., U. S. Dept. Agric., pp. 13–14, 1897.

EXHIBIT: Adult and figure.

THE DEPRESSED FLOUR-BEETLE.

Palorus subdepressus Woll.

EXHIBIT: Adult.

ALPHITOBIUS PICEUS Ol.

EXHIBIT: Adult.

BROAD-NOSED GRAIN WEEVIL.

Caulophilus latinasus Say.

For general account see Chittenden, Bul. 8, n. s., Div. Ent., U. S. Dept. Agric., pp. 13–14, 1897.

EXHIBIT: Adult.

THE GRANARY WEEVIL.

Calandra granaria Linn.

(For an important enemy of stored grain, see *C. oryza*, under "Rice.")

For short account, see Chittenden, Farmers' Bul. 45, rev. ed., U. S. Dept. Agric., pp. 4–5, 1897.

EXHIBIT: Adult, work and figure.

BRACHYTARSUS ALTERNATUS Say.

For life history, notes, and general accounts, see Quaintance, Ent. News, pp. 1–3, plate, 1897.

EXHIBIT: Adult and figure.

HOUSEHOLD INSECTS.

For general account of household insects see Howard, Marlatt, and Chittenden, Bul. 4, n. s., rev. ed., Div. Ent., U. S. Dept. Agric., 1902. Contains articles on all the insects represented in the exhibit.

THE HOUSE CENTIPEDE.

Scutigera forceps Raf.

(While this animal is not an insect, but belongs to the class Myriapoda, it is so regularly associated with the insects that it may appropriately be presented with them. It feeds on flies, moths, roaches, etc.)

For general article see Marlatt, Cir. 48, Div. Ent., U. S. Dept. Agric., 1902.

EXHIBIT: Figure.

THE SILVER FISH.

Lepisma domestica Pack.

For general article see Marlatt, Cir. 49, Div. Ent., U. S. Dept. Agric., 1902.

EXHIBIT: Figure.

THE BOOK-LOUSE.

Troctes divinatoria Müll.

(Formerly *Psocus* and *Atropos*.)

EXHIBIT: Figure.

THE WHITE ANT.

Leucotermes flavipes Koll.

(Formerly *Termes*.)

For general account see Marlatt, Cir. 50, Div. Ent., U. S. Dept. Agric., 1902.

EXHIBIT: Adult and figure.

THE AMERICAN COCKROACH.

Periplaneta americana Linn.

For general article see Marlatt, Cir. 51, Div. Ent., U. S. Dept. Agric., pp. 1–8, 1902.

EXHIBIT: Adult and figure.

THE BLACK BEETLE.

Blatta orientalis Linn.

For general article see Marlatt, Cir. 51, Div. Ent., U. S. Dept. Agric., pp. 9–10, 1902.

EXHIBIT: Adult and figure.

THE CROTON BUG.

Blatella germanica Linn.

(Formerly *Ectobia*.)

For general article see Marlatt, Cir. 51, Div. Ent., U. S. Dept. Agric., pp. 10–11, 1902.

EXHIBIT: Adult.

THE HOUSE CRICKET.

Gryllus domesticus Linn.

EXHIBIT: Adult.

THE CASE-MAKING CLOTHES MOTH.

Tinea pellionella Linn.

For general article see Marlatt, Cir. 36, Div. Ent., U. S. Dept. Agric., pp. 1–4, 1898.

EXHIBIT: Adult and figure.

THE TAPESTRY MOTH.

Trichophaga tapetzella Linn.

(Formerly *Tinea.*)

For general article see Marlatt, Cir. 36, Div. Ent., U. S. Dept. Agric., p. 5, 1898.

EXHIBIT: Figure.

THE WEBBING CLOTHES MOTH.

Tineola biselliella Hum.

(Formerly *Tinea.*)

For general article see Marlatt, Cir. 36, Div. Ent., U. S. Dept. Agric., pp. 4–5, 1898.

EXHIBIT: Adult and figure.

THE RED-LEGGED HAM BEETLE.

Necrobia rufipes DeG.

(Formerly *Corynetes.*)

EXHIBIT: Adult and figure.

THE LARDER BEETLE.

Dermestes lardarius Linn.

EXHIBIT: Adult and figure.

THE CARPET BEETLE OR "BUFFALO MOTH."

Anthrenus scrophulariæ Linn.

For general article see Howard, Cir. 5, Div. Ent., U. S. Dept. Agric., 1894.

EXHIBIT: Adult and figure.

THE CHEESE OR HAM SKIPPER.

Piophila casei Linn.

EXHIBIT: Adult.

THE FRUIT OR VINEGAR FLY.

Drosophila ampelophila Loew.

For general accounts see Howard, Bul. 4, n. s., Div. Ent., U. S. Dept. Agric., pp. 109–111, 1896; Proc. Wash. Acad. Sci., v. II, pp. 589–590, pl. 31, fig. 2, 1900.

EXHIBIT: Adult and figure.

THE LITTLE RED ANT.

Monomorium pharaonis Linn.

For general article see Marlatt, Cir. 34, Div. Ent., U. S. Dept. Agric., pp. 1–2, 1898. For bibliography and general account see Lintner, 11th Rpt. N. Y. St. Entom., pp. 109–114, 1896.

EXHIBIT: Adult and figure.

INSECTS WHICH MAY SPREAD DISEASE.

General articles: Howard, Farmers' Bulletin 155, U. S. Dept. Agric., 1902; also Bul. 30, n. s., Div. Ent., U. S. Dept. Agric., pp. 39–45, 1901.

THE YELLOW-FEVER MOSQUITO.

Stegomyia fasciata Fab.

(Is the intermediate host for the parasite of yellow fever. Formerly *Culex.*)

EXHIBIT: Adult and figure.

THE MALARIA MOSQUITO.

Anopheles maculipennis Meig.

(The most important of the mosquitoes transmitting malaria. Formerly *A. quadrimaculatus.*)

EXHIBIT: Adult and figure.

THE GREEN BOTTLE FLY.

Lucilia cæsar Linn.

For general article see Howard, Cir. 35, Div. Ent., U. S. Dept. Agric., 1898.

EXHIBIT: Adult and figure.

THE STABLE FLY.

Stomoxys calcitrans Linn.

For special article see Howard, Proc. Wash. Acad. Sci., v. II, pp. 577–579, fig. 27, 1900.

EXHIBIT: Adult and figure.

THE HIPPELATES FLY.

Hippelates flavipes Loew.

(Facilitates the spread of the disease known as "pink-eye.")

EXHIBIT: Adult and figure.

THE BROWN DUNG FLY.

Scatophaga furcata Say.

EXHIBIT: Adult and figure.

THE SHINING EXCREMENT FLY.

Morellia micans Macq.

EXHIBIT: Adult and figure.

THE LITTLE HOUSE FLY.

Homalomyia brevis Rond.

EXHIBIT: Adult and figure.

THE FRUIT OR VINEGAR FLY.

Drosophila ampelophila Loew.

EXHIBIT: Adult and figure.

THE SCREW-WORM FLY.

Chrysomyia macellaria Fab.

(Formerly *Compsomyia.*)

For special article see Howard, Proc. Wash. Acad. Sci., v. II, p. 562, 1900.

Exhibit: Adult and figure.

THE CATTLE TICK.

Boophilus annulatus Say.

(Very common on cattle below the Texas fever line, and known to be responsible for transmission of Texas fever among cattle.)

Exhibit: Eggs, adult, and figure.

INSECTS WHICH DIRECTLY INJURE OR ANNOY HUMAN BEINGS.

THE HOUSE FLY.

Musca domestica Linn.

For general article see Howard, Cir. 35, Div. Ent., U. S. Dept. Agric., 1898.

Exhibit: Adult and figure.

THE SOUTHERN BUFFALO GNAT.

Simulium pecuarum Riley.

For general article and full life history see Osborn, Bul. 5, n. s., Div. Ent., U. S. Dept. Agric., pp. 41–52, 1896.

Exhibit: Adult and figure.

THE CAT AND DOG FLEA.

Ctenocephalus canis Curtis.

(Formerly *Pulex serraticeps* Gerv.)

For general account see Howard and Marlatt, Bul. 4, n. s., rev. ed., Div. Ent., U. S. Dept. Agric., pp. 24–31, 1902. For full bibliography see Baker, Proc. U. S. N. M., v. XXVII, p. 438, 1904.

Exhibit: Figure.

THE BLOOD-SUCKING CONE-NOSE.

Conorhinus sanguisuga Lec.

For general article see Howard and Marlatt, Bul. 4, n. s., rev. ed., Div. Ent., U. S. Dept. Agric., pp. 38–42, 1902.

Exhibit: Egg, nymph, adult, and figure.

THE HOUSE MOSQUITO.

Culex pipiens Linn.

For general article and life history see Howard, Bul. 25, n. s., Div. Ent., U. S. Dept. Agric., pp. 22–28, 1900. Treated as *C. pungens* Wied.

Exhibit: Adult and figure.

THE BEDBUG.

Klinophilos lectularia Linn.

(Formerly *Acanthia* and *Cimex*.)

For general article see Marlatt, Cir. 47, Div. Ent., U. S. Dept. Agric., 1902.

EXHIBIT: Nymph, adult, and figure.

THE BLACK BEETLE.

Blatta orientalis Linn.

For general article see Marlatt, Cir. 51, Div. Ent., U. S. Dept. Agric., pp. 9–10, 1902.

EXHIBIT: Adult and figure.

THE RED BUG.

Leptus irritans Riley.

For general article see H. Osborn, Bul. 5, n. s., Div. Ent., U. S. Dept Agric., pp. 251–253, 1896.

EXHIBIT: Figure.

THE HEAD LOUSE.

Pediculus capitis DeG.

For general article see H. Osborn, Bul. 5, n. s., Div. Ent., U. S. Dept. Agric., pp. 166–167, 1896.

EXHIBIT: Figure.

THE BODY LOUSE.

Pediculus vestimenti Leach.

For general article see H. Osborn, Bul. 5, n. s., Div. Ent., U. S. Dept. Agric., pp. 167–168, 1896.

EXHIBIT: Figure.

THE CRAB LOUSE.

Phthirius inguinalis Leach.

For general article see H. Osborn, Bul. 5, n. s., Div. Ent., U. S. Dept. Agric., pp. 165–166, 1896.

EXHIBIT: Eggs, adult, and figure.

INSECTS INJURIOUS TO DOMESTIC ANIMALS.

For general account with illustrations of many of the insects affecting domestic animals see Osborn, Bull. 5, n. s., Div. Ent., U. S. Dept. Agric., pp. 1–302, 1896.

THE SOUTHERN BUFFALO GNAT.

Simulium pecuarum Riley.

EXHIBIT: Adult and figure.

THE TURKEY GNAT.

Simulium meridionale Riley.

EXHIBIT: Pupa, adult, and figure.

AMERICAN GAD-FLY.

Tabanus americanus Forst.

EXHIBIT: Adult.

THE GRAY-STRIPED GREEN-HEAD.

Tabanus lineola Fab.

EXHIBIT: Adult and figure.

THE BLACK GAD-FLY.

Tabanus atratus Linn.

EXHIBIT: Larva, adult, figure, and figure of parasite *Phanurus tabanivorus* Ashm.

THE GREENHEAD.

Tabanus costalis Wied.

EXHIBIT: Adult.

TABANUS EXUL O. S.

EXHIBIT: Adult.

TABANUS PUNCTIFER O. S.

EXHIBIT: Adult.

TABANUS CINCTUS Fab.

EXHIBIT: Adult.

MEXICAN BOT-FLY.

Tabanus mexicanus Linn.

EXHIBIT: Adult.

THE BLACK-STRIPED GAD-FLY.

Tabanus nigrovittatus Macq.

EXHIBIT: Adult.

THE BLACK-STRIPED EAR-FLY

Chrysops vittatus Wied.

EXHIBIT: Adult and figure.

CHRYSOPS ATROPOS O. S.

EXHIBIT: Adult.

CHRYSOPS HILARIS O. S.

EXHIBIT: Adult.

THE STABLE FLY.

Stomoxys calcitrans Linn.

For special article see Howard, Proc. Wash. Acad. Sci., v. II, pp. 577–579, fig. 27, 1900.

EXHIBIT: Adult and figure.

THE HORSE BOT-FLY.

Gastrophilus equi Fab.

EXHIBIT: Eggs, larva, puparia, adult, and figure.

THE "CHIN" FLY.

Gastrophilus nasalis Linn.

EXHIBIT: Adult.

THE WARBLE FLY.

Hypoderma bovis DeG.

(A European species.)

EXHIBIT: Eggs, adult and figure.

THE OX BOT; OX WARBLE.

Hypoderma lineata Vill.

EXHIBIT: Larva, adult, and figure.

THE SHEEP BOT-FLY; HEAD MAGGOT.

Œstrus ovis Linn.

EXHIBIT: Larva, puparia, adult, and figure.

THE HORN FLY.

Hæmatobia serrata R-D.

For special article see Riley and Howard, Insect Life, v. II, pp. 93–103.

EXHIBIT: Puparium, adult, and figure.

THE SHEEP TICK.

Melophagus ovinus Linn.

EXHIBIT: Adult and figure.

THE SCREW-WORM FLY.

Chrysomyia macellaria Fab.

(Formerly *Compsomyia.*)

For special article see Howard, Proc. Washington Acad. Sci., v. II, p. 562, 1900.

EXHIBIT: Adult and figure.

THE CAT AND DOG FLEA.

Ctenocephalus canis Curtis.

(Formerly *Pulex serraticeps* Gerv.)

For full bibliography see Baker, Proc. U. S. N. M., v. XXVII, p. 438, 1904.

EXHIBIT: Figure.

THE SUCKING HORSE-LOUSE.

Hæmatopinus asini Linn.

EXHIBIT: Figure.

THE SHORT-NOSED OX-LOUSE.

Hæmatopinus eurysternus Nitsch.

EXHIBIT: Figure.

THE LONG-NOSED OX-LOUSE.

Hæmatopinus vituli Linn.

EXHIBIT: Adult and figure.

THE CATTLE LOUSE.

Trichodectes scalaris Nitsch.

EXHIBIT: Adult and figure.

THE SHEEP LOUSE.

Trichodectes sphærocephalus Nitsch.

EXHIBIT: Adult and figure.

TICKS INJURIOUS TO DOMESTIC ANIMALS.

For general account, bibliography, and illustrations see Salmon and Stiles, Cattle Ticks, 17th Ann. Rept. B. A. I., U. S. Dept. Agric., pp. 380–491, 1900.

THE CATTLE TICK.

Boophilus annulatus Say.

(Very common on cattle below the Texas fever line and known to be responsible for transmission of Texas fever among cattle.)

EXHIBIT: Adult and figure.

THE SOUTHERN CHICKEN TICK.

Argas miniatus Koch.

(Also reported on cattle.)

EXHIBIT: Adult and figure.

THE SPINOSE EAR TICK.

Ornithodoros megnini Dugés.

(On man, cattle, horses, dogs, sheep, etc.)

EXHIBIT: Adult and figure.

THE AMERICAN DOG TICK.

Dermacentor electus Koch.

(On man, cattle, dogs, and horses.)

EXHIBIT: Adult and figure.

THE NETTED TICK.

Dermacentor reticulatus Fab.

(On man, cattle, horses, and sheep.)

EXHIBIT: Adult and figure.

THE LONE-STAR TICK.

Amblyomma americanum Linn.

(Not uncommon on cattle and man.)

EXHIBIT: Adult and figure.

THE CASTOR-BEAN TICK.

Ixodes ricinus Linn.

(On man, cats, dogs, cattle, goats, horses, rabbits, etc.)

EXHIBIT: Adult and figure.

SPECIAL EXHIBIT OF MODELS OF INSECTS AND OF PLANTS AND INSECTS AFFECTING THEM.

YELLOW FEVER MOSQUITO.

Stegomyia fasciata Fab.

Enlarged model. This mosquito transmits yellow fever and it is now the opinion of the best-posted experts that only through its bite can one contract this disease.

MALARIA MOSQUITO.

Anopheles maculipennis Meig.

Enlarged model. This and other species of Anopheles are the only known transmitters of human malaria. The parasitic organism causing malaria inhabits the red-blood cells of human beings. It is taken with the blood into the stomach of the mosquito. There it undergoes a sexual development, reproduces, and the offspring are carried with the mosquito poison into the circulation of healthy human beings.

SALT MARSH MOSQUITO.

Culex sollicitans Walk.

Enlarged model. This mosquito is not known to carry any disease, but is very annoying at many seaside resorts.

THE HOUSEFLY.

Musca domestica Linn.

Enlarged model. The housefly is not merely a nuisance, but also acts as a carrier of many diseases, especially in the United States of typhoid fever.

HESSIAN FLY.

Cecidomyia destructor Say.

One of the most injurious enemies of wheat in the Northern and Central States. The larva attacks the stem. The average yearly damage to the wheat industry in this country from this insect is $60,000,000.

Enlarged models are exhibited of the adult fly, and of an infested stalk of wheat showing the so-called "flaxseed" stage of the insect.

Two natural-size models are exhibited, one representing a healthy, unaffected young wheat plant to contrast with the same attacked by the Hessian fly; the other illustrating the effects of the attacks of the Hessian fly.

GRAPE-VINE TRUMPET-GALL.

Lasioptera viticola O. S.

Model in wax of the abnormal growths caused by the sting of a minute dipterous insect not infrequently observed on the leaves of the grape.

GRAPE-VINE TOMATO-GALL.

Lasioptera vitis O. S.

Model in wax of the abnormal growths on terminal twigs of the grape, caused by the sting of a little gnat.

GRAPE-VINE PHYLLOXERA-GALL.

Phylloxera vastatrix Planch.

Model in wax of the galls produced by the leaf form of the grape Phylloxera, showing their characteristic appearance and disposition on the leaf.

SOCIAL GRAPE CATERPILLAR.

Harrisina americana Harr.

Twigs of grape-vine modeled in wax, showing the characteristic appearance and work of the larvæ and their method of feeding in uniform rows on the leaf.

THE GRAPE-SEED WEEVIL.

Craponius inæqualis Say.

A bunch of grapes, showing damage to the berries by the larvæ of this insect; also punctures made by the female beetle in oviposition.

THE SILKWORM.

Bombyx (*Sericaria*) *mori* Linn.

Enlarged model of the larva, showing its complete anatomy; the muscles, nerves, trachæ, viscera, the silk apparatus in its whole extent, the silk-secreting gland, and the gland discovered by Auzoux, which secretes a liquid, the use of which is most probably to convert the silky matter into insoluble threads. In one of the prolegs may be seen the muscles which move the claws and sucking disks which enable the animal to walk with its true feet in the air.

Enlarged models of the moths, male and female. In each model is shown the atrophy of the digestive tube and the development of the marvelous organs by which the species is perpetuated. (After Auzoux.)

HOP PLANT-LOUSE.

Phorodon humuli Schr.

Unaffected Hop Plant.—A spray of hops, modeled in wax, representing the plant as it appears in vigorous growing condition, and free from the attacks of its principal enemy, the hop plant-louse to contrast the stronger foliage and the more abundant and larger hops produced by plants from which the hop louse has been eradicated by the use of proper remedies.

Affected Hop Plant.—A spray of hops modeled in wax, representing the vine as it appears when attacked by the hop plant-louse, showing the blackening and discoloration of the leaves and the small and inferior hops which are also discolored and otherwise unsuitable for market.

Winter Eggs.—Enlarged model of the winter eggs, which are attached by the sexual female to the terminal twigs of the plum, in crevices around the buds.

Stem-Mother.—The stout female plant-louse shown in this enlarged model hatches from the winter egg and is characterized by shorter legs and honey-tubes. It gives birth without the intervention of the male to living young, of which three generations are produced on the plum trees, the last being winged and migrating to the hop.

Winged Migrant.—This enlarged model represents the first winged generation, the third produced on the plum. It instinctively flies to the hop plant and is the progenitor of from five to twelve wingless generations of virgin females, which infest the hop plants until autumn, and are the sole forms which depredate on the hop. In autumn the last generation again produces winged females which fly to the plum trees.

Hop-Affecting Stage.—This enlarged model represents the structure and appearance of the five to twelve wingless generations of virgin females which people the hop plant until autumn. These are the progeny of the *winged migrants* and are the sole forms which injure the hop.

Return Migrant.—This enlarged model represents the last generation produced on the hop, the winged migrant form which in September returns again to the plum and gives birth to three or more young, which are the true sexual females, the first perfect sexual females produced in the cycle up to this point.

Pupa of Return Migrant.—This model represents the pupal stage of the *return migrant*. The striking features are the wing pads, which with another molt become the ample flight organs seen in the model of the adult.

True Sexual Female.—This enlarged model represents the generation born of the return migrant, which never acquire wings and never leave the plum tree. Maturing in a few days, according to the temperature, they are fertilized by the true winged males which have been subsequently developed on the hops, and have come from the hop fields to the plum. Shortly after fertilization the winter eggs, like those with which the cycle started, are deposited.

Young Sexual Female.—This enlarged model represents the newly hatched stage of the only perfectly developed sexual female produced in the life cycle of this insect.

Winged Male.—This enlarged model represents the first and only male generation produced in the life cycle of the hop-plant louse. This is developed in the autumn, and flies from the hop to the plum and fertilizes the true sexual females.

CHINCH BUG.

Blissus leucopterus Say.

The Eggs.—This enlarged model represents the form of the egg and the terminal cap. The eggs are three-hundredths of an inch long, the top being squarely docked and surrounded by four round tubercles near the center. Color from pale whitish to amber.

First Larval Stage.—This stage, represented enlarged in this model, differs from the adult in being more elongate and in having two-jointed tarsi, the head broader and more rounded and the joints of the body subequal. The prevailing color of the whole body is red.

Second Larval Stage.—After the first molt the form represented in this enlarged model is assumed. The red becomes a brilliant vermilion and contrasts with the pale band across the middle of the body, while the head and prothorax are dusky and coriaceous. Two broad marks appear on the mesothorax and the second, fourth, and fifth abdominal sutures, and one at the tip of the abdomen.

Pupa.—The pupa shown in this enlarged model approaches still more nearly the form of the adult, and is not unlike the last larval stage except in being darker and in the appearance of wing-pads, which extend almost across the pale basal abdominal joints.

The Imago.—The mature insect which is represented enlarged in this model is elongate, blackish, and with numerous hairs, or pubescense. Its length is about three-twentieths of an inch. The outer wings are whitish, with a strong distinctive black spot.

THE SAN JOSE SCALE.

Aspidiotus perniciosus Comst.

Ten enlarged models are exhibited illustrating the life cycle of this pest, which has caused more damage to the fruit industry and been the object of more legislation than any other insect. Its small size and inconspicuous appearance often leave it undetected until the infested trees are beyond recovery. The scale may be killed by fumigation or spraying.

Enlarged models are exhibited of the *first* and *second larval stages*, of the *young crawling larva*, *nearly full-grown larva*, *male pro-pupa*, *male pupa*, *adult male*, *adult female*, and of the *half-grown scale*, *full-grown male scale*, and *full-grown female scale*.

THE ASIATIC LADY-BIRD.

Chilocorus similis Rossi.

Two enlarged models are exhibited illustrating the adult and the larva of this insect, which was introduced by the U. S. Department of Agriculture from China, where it is the important agent in keeping the San José scale in check.

THE CODLING MOTH.

Carpocapsa pomonella Linn.

Four enlarged models illustrating the life history of this insect which is the cause of the "wormy apples." The damage from it in this country is estimated at $11,000,000 annually.

Models are exhibited of the *larva* and of the *adult moth;* and also an enlarged section of a *piece of bark*, cut so as to show a cocoon and pupa of the codling moth beneath it, and an enlarged section of "wormy" apple showing egg, young, and mature larva and their work.

THE MEXICAN COTTON BOLL WEEVIL.

Anthonomus grandis Boh.

Enlarged model. This insect is a native of Cuba and Mexico; upwards of ten years ago the weevils crossed the Rio Grande near Brownsville and have now spread over nearly the entire cotton belt of Texas. Its rapid extension, great destructiveness, and the unusual difficulties in the way of its control have caused grave fears for the future of the cotton industry in the United States. The Federal Government has this year appropriated $250,000 for combating this insect.

THE HONEY BEE.

Apis mellifera Linn.

Enlarged models, reproducing the insect in six different forms—queen, male, wax-worker, worker, bee with propolis, and the bee with pollen. In these are shown the external and internal characters which distinguish each type. Also a model of a comb in the same proportion, in which are seen the cells for honey, for pollen, and for the eggs to produce queens, drones, and workers, with eggs, larvæ, and pupæ in different stages of development. (After Auzoux.)

THE EUROPEAN COCKCHAFER.

Melolontha vulgaris Fab.

Model of the perfect insect enlarged twelve times, showing the muscles, nerves, trachea, and viscera, each model separable into as many pieces as there are organs. More than 600 detailed objects are shown, each indicated by a corresponding number.

FLUTED SCALE.

Icerya purchasi Mask.

Model in wax of a twig of orange infested with the fluted scale (*Icerya purchasi*) copied directly from nature, the actual scales being transferred to the model plant. Illustrates the characteristic appearance of the infested plant.

Model of Noninfested Orange.—The model in wax contrasts with the one representing the characteristic appearance of infested plant.

Illustrations from the publications of the Division of Entomology, representing the different stages of the fluted scale and its principal enemies.

AUSTRALIAN LADYBIRD.

Novius (*Vedalia*) *cardinalis* Muls.

(Principal enemy of the fluted scale [*Icerya purchasi*].)

Enlarged model of the adult of this insect, the introduction of which from Australia has effected what was impossible by any other means—the practical annihilation of the fluted scale in California.

Enlarged models showing structure and characteristic appearance of the larva and pupa.

IMPORTED CURRANT WORM.

Pteronus ventricosus Klug.

This wax model of a currant branch illustrates the work of the imported currant worm. For extended exhibit of the insects affecting the currant see regular economic cases.

PLUM CURCULIO.

Conotrachelus nenuphar Hbst.

The work of the plum curculio on the fruit of the plum, apple, pear, cherry, and peach is illustrated by models. For full details as to the work of this insect see exhibit in regular economic series.

Young apples and pears, a twig of cherry and a branch of peach with ripening fruit, and twigs of plum with green and ripening fruit, illustrating the effects of punctures by the female curculio, are shown.

THE "KISSING BUG."

Reduvius personatus Linn.

Enlarged model of one of the group of true bugs, generally known as "assassin bugs," which of late years have acquired a certain newspaper notoriety through their supposed preference for the human lips.

They feed on other insects, which they pierce with their strong beaks; some species are frequently found in houses, attracted by light, and they may, if they believe themselves in danger, accidentally or in defense, pierce the human skin with their beaks, causing a painful wound, and often blood poisoning through the introduction of the germs of putrefaction.

ORANGE RUST-MITE.

Eriophyes (*Phytoptus*) *oleivorus* Ashm.

Wax models of oranges, showing work of the orange rust-mite.

THE PARASITE CAUSING MALARIA (ÆSTIVO-AUTUMNAL FEVER).

Plasmodium malariæ.

Twenty-nine enlarged models, illustrating the life history of this parasite in the blood of man and in the mosquito (*Anopheles*).

The models exhibited show: Development of spores in the blood of

man; development of "crescent" in the blood of man; development of "gamete" in stomach of mosquito; development and fertilization of "zygote" in stomach of mosquito; development of "zygote" in stomach wall of mosquito; "zygote" filled with "blasts" and ready to burst; free endospores, free blasts, and spermatozoa.

RIKER MOUNTS SHOWING LIFE HISTORIES OF INSECTS.

LEPIDOPTERA.

Eight-spotted Forester.
Alypia octomaculata Fab.

Grapevine Hog Caterpillar.
Ampelophaga myron Cram.

Stigma Moth.
Anisota stigma Fab.

Spring Maple Worm.
Anisota rubicunda Fab.

Maple Dagger Moth.
Apatela americana Harr.

Io Moth.
Automeris io Fab.

Calleta Silkmoth.
Callosamia calleta Westw.

Prometheus Silkmoth.
Callosamia promethea Dru.

Chainspotted Geometer.
Cingilia catenaria Cram.

Hickory Horned Devil.
Citheronia regalis Fab.

Cranberry Spanworm.
Cleora pampinaria Guen.

Yellow-Necked Caterpillar.
Datana ministra Dru.

Roller Worm.
Eudamus proteus Linn.

Brown-Tail Moth.
Euproctis chrysorrhœa Linn.

Large Beautiful Woodnymph.
Euthisanotia grata Fab.

Mourning Cloak.
Euvanessa antiopa Linn.

Oak Tussock Caterpillar.
Halisidota maculata Harr.

Social Grape Caterpillar.
Harrisina americana Guér.

White-Marked Tussock-Caterpillar.
Hemerocampa leucostigma S. & A.

Lunate Looper.
Homoptera lunata Dru.

Fall Webworm.
Hyphantria cunea Dru.

Fall Army Worm.
Laphygma frugiperda S. & A.

The Army Worm.
Heliophila (Leucania) unipuncta Haw.

Apple Tent-Caterpillar.
Malacosoma americana Harr.

The Baltimore.
Euphydryas phæton Dru.

Parsnip Butterfly.
Papilio polyxenes Fab.

Spice-Bush Swallowtail.
Papilio troilus Linn.

Cynthia Silkmoth.
Philosamia cynthia Dru.

Semicolon Butterfly.
Polygonia interrogationis Fab.

Gipsy Moth.
Porthetria dispar Linn.

Tobacco Worm.
Phlegethontius quinquemaculata Haw.

Jorulla Silkmoth.
Rothschildia jorulla Westw.

Orizaba Silkmoth.
Rothschildia orizaba Westw.

Polyphemus Silkmoth.
Telea polyphemus Cram.

The Bagworm.
Thyridopteryx ephemeræformis Steph.

Luna Moth.
Tropæa luna Linn.

ORTHOPTERA.

Walking Stick.

Anisomorpha buprestoides Stôl.

Katydid.

Microcentrum retinerve Burm.

The Soothsayers or Rearhorses.

(Chinese and American Species.)

Paratenodera sinensis Sauss. and *Stagmomantis carolina* Burm.

COLEOPTERA.

Asparagus Beetles.

Crioceris asparagi Linn. and *C. duodecempunctata* Linn.

Elm Leaf Beetle.

Galerucella luteola Müll.

HEMIPTERA.

Seventeen-Year Locust.

Tibicen septendecim Linn.

SILKMOTHS.

THE JAPANESE SILKMOTH.

Antheræa yamamai Guér.

Exhibit: Cocoon, adult, and figure.

THE IO MOTH.

Automeris io Fab.

Exhibit: Larva, cocoon, and adult.

THE ANGULATED SILKMOTH.

Callosamia angulifera Wlk.

Exhibit: Adult.

THE PROMETHEUS SILKMOTH.

Callosamia promethea Dru.

Exhibit: Larva, cocoon, and adult.

THE CYNTHIA SILKMOTH.

Philosamia cynthia Dru.

Exhibit: Adult.

THE GIANT INDIAN SILKWORM.

Attacus atlas Linn.

Exhibit: Adult.

THE CECROPIA SILKMOTH.

Samia cecropia Linn.

Exhibit: Cocoon, adult, and figure.

THE COLUMBIA SILKMOTH.

Samia columbia Sm.

Exhibit: Cocoon and adult.

THE PACIFIC-COAST SILKMOTH.

Samia rubra Behr.

EXHIBIT: Larva and adult.

THE POLYPHEMUS SILKMOTH.

Telea polyphemus Linn.

EXHIBIT: Cocoon, adult, and figure.

THE LUNA SILKMOTH.

Tropæa luna Linn.

EXHIBIT: Larva, cocoon, and adult.

MISCELLANEOUS EXHIBITS.

SILKWORMS.

The rearing of silkworms will be conducted on a small scale throughout the summer. Eggs will be kept in cold storage, so that all stages, from the egg to the full-grown larva spinning its cocoon, may be seen at any time during the season.

LIVING INSECTS.

By means of aquaria, vivaria, and other forms of insect cages living insects will be on exhibit, feeding on their natural food plants and undergoing their usual transformations.

Some of the more important economic species injuring cotton and apple will be reared on growing specimens of these plants. In the smaller aquaria may be seem stages of some of the species of mosquitoes frequenting St. Louis and vicinity.

There will also be exhibited one box illustrating the methods of mounting insects for shipment and for permanent preservation in collections; also numerous photographs showing spraying machinery, reeling of silk from cocoons, silk machinery, etc.

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